

Tehran Twister / Climate Change: What Would Darwin Do?

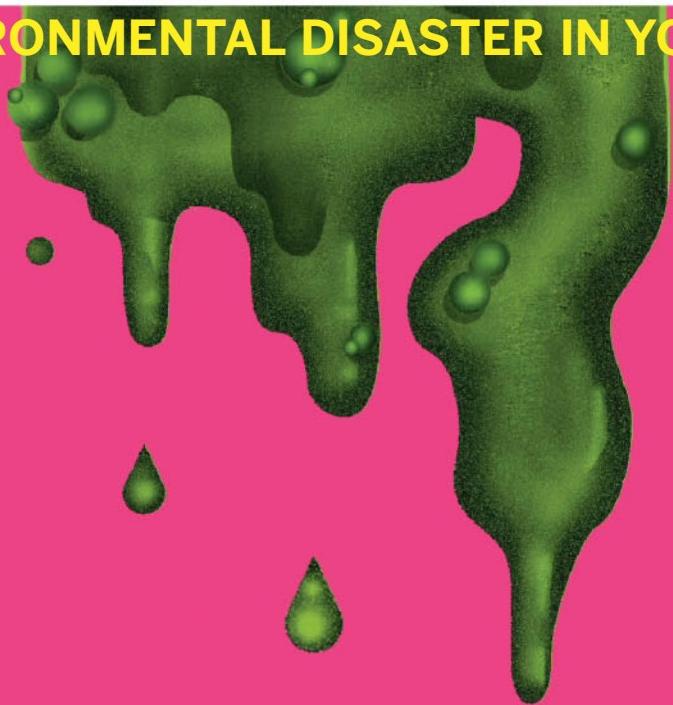
# Newsweek

21.08.2015



## TOXIC FASHION

THE ENVIRONMENTAL DISASTER IN YOUR CLOSET



WHO KNOWS THE OTTO MAN?



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# Newsweek

08.21.2015 / VOL. 165 / NO. 07



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by Nina Burleigh

COVER CREDIT: ILLUSTRATION BY OLIVER MUNDAY

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# HELP SAVE THE 'WOW'

These giants of the animal kingdom need help. Despite their strength and cunning they're no match for a poacher's rifle. For 50 years WWF has been securing protected areas worldwide, but these aren't enough to stop the killing. To disrupt the sophisticated criminal gangs supplying animal parts to lucrative illegal markets, we are working with governments to toughen law enforcement. We're also working with consumers to reduce the demand for unlawful wildlife products. Help us look after the world where you live at [panda.org/50](http://panda.org/50)







BIG SHOTS

MACEDONIA

## Losing Track

Gevgelija,  
Macedonia—

A migrant rests on a station platform on the Macedonian-Greek border on August 6. Unwelcome in Greece, many migrants are trying to cross Macedonia and Serbia to enter the European Union via Hungary. Once there, they hope to seek asylum in Sweden or Germany; the latter has accepted more refugees this year than any other European country. Citing the economic crisis in his country, Greek Prime Minister Alexis Tsipras asked the EU to help handle the tens of thousands of refugees coming into Greece. In July alone, 50,000 people made it to Greece, many of them in rickety boats barely fit to go to sea.

DIMITAR DILKOFF/GETTY

## YEMEN

## Paint Bombs

Sanaa, Yemen—Graffiti painted on the wall of the Saudi Embassy by pro-Houthi activists protests Saudi-led airstrikes in Yemen, as seen August 2. A Saudi-led Arab alliance launched a military campaign on March 26 to end Houthi control over much of Yemen and return President Abed Rabbo Mansour Hadi from exile. In recent weeks, intense fighting at the Al-Anad air base led to mounting casualties as pro-government forces took back the military outpost. The violence has killed at least 1,700 people, according to the United Nations, and around 1.2 million

people have been internally displaced. British charity Oxfam has warned that more than 6 million people are at risk of starvation due to a blockade of essential supplies.

=====

KHALED ABDULLAH



KHALED ABDULLAH/REUTERS



ISRAEL

## Center of Detention

Nazareth Illit, Israel—Meir Ettinger appears at Nazareth Magistrate's Court in Israel on August 4 for deliberations on a police request to extend his detention without trial. Ettinger, who tops the Shin Bet internal security organization's list of most-wanted Jewish extremists, was arrested in a crackdown following an arson attack that killed a Palestinian baby. He was not charged in that attack, but Defense Minister

Moshe Yaalon said he had been detained for "involvement in an activity by an extremist Jewish group." Ettinger and another suspected militant, Eviatar Slonim, were ordered detained for six months without trial. Ettinger is the grandson of the late

Jewish extremist Rabbi Meir Kahane, who was assassinated in 1990. Israeli-Palestinian tensions have soared since suspected Jewish extremists threw a firebomb into the home of a Palestinian family in a West Bank village.

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NIR KAFRI







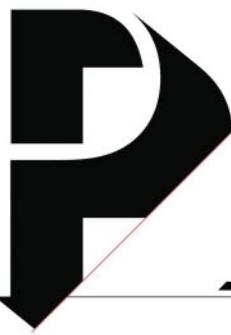


TURKEY

## Terror in Turkey

Istanbul—Special forces police officers on patrol August 10 during clashes with armed gunmen at the Fatih Police Station. Turkey's largest city was rocked by twin attacks, on the station and the U.S. consulate, as tensions spiral amid the government's air campaign against Kurdish militants and ISIS forces in neighboring Iraq and Syria. In the early-morning hours, a car bomb was detonated outside the station, wounding at least 10 people. Hours later, gunmen stormed the station as officers were sifting through the wreckage. One officer was shot and died later at the hospital. In another attack that same morning, two women were shot at the consulate before one was captured and the other fled. No injuries were reported in that incident. The Kurdistan Workers' Party identified the women as members but stopped short of claiming responsibility for the consulate attack.

=====  
OZAN KOSE



# PAGE ONE

INTELLIGENCE

IRAN

OLYMPICS

TERRORISM

Egypt

FRANCE

## TEHRAN TWISTER

The Iran nuclear accord could win John Kerry a Nobel Prize or blow up the Middle East

AT THE END of May, during a pause in the Iran nuclear talks in Switzerland, Secretary of State John Kerry was riding his bike around Lake Geneva when he accidentally hit a curb and crashed. This was no ordinary accident. Kerry's thigh bone broke close to his hip, which doctors had previously replaced. Such a painful injury might have forced another 71-year-old to lie in bed for months. But in just four weeks, Kerry bounced back. Hobbling on crutches in his signature blue suit and pink pastel tie, he flew to Vienna at the end of June for the final round of talks with Tehran. In marathon sessions that often ran into the early hours, Kerry worked through his pain and hammered out what could prove to be one of the world's most significant nonproliferation treaties.

The deal, which severely restricts Iran's nuclear program for at least 15 years in return for easing sanctions, represents both a physical and professional comeback for Kerry, who first tried and failed last year to etch his name into diplomatic history by brokering an Israeli-Palestinian

peace accord. But with his victory in Vienna—and the likelihood that the Iran deal will survive a September challenge in Congress—Kerry is poised to provide President Barack Obama with his crowning foreign policy achievement. Some observers even predict the deal puts Kerry in line for a Nobel Peace Prize.

"It's an enormous diplomatic accomplishment. There's no question that it has profoundly changed the status quo," P.J. Crowley, a veteran of President Bill Clinton's National Security Council and Hillary Clinton's State Department, tells *Newsweek*. "There was a major issue that had the potential to lead to a military confrontation, and through effective diplomacy, he sidelined it. This is exactly what you expect a diplomat to do." Kerry, he adds, has now established a valuable channel of communication with Iran that can be used for future diplomatic efforts.

Already, the former Massachusetts senator is talking optimistically about working with the Iranians to address the conflicts in Syria, Iraq

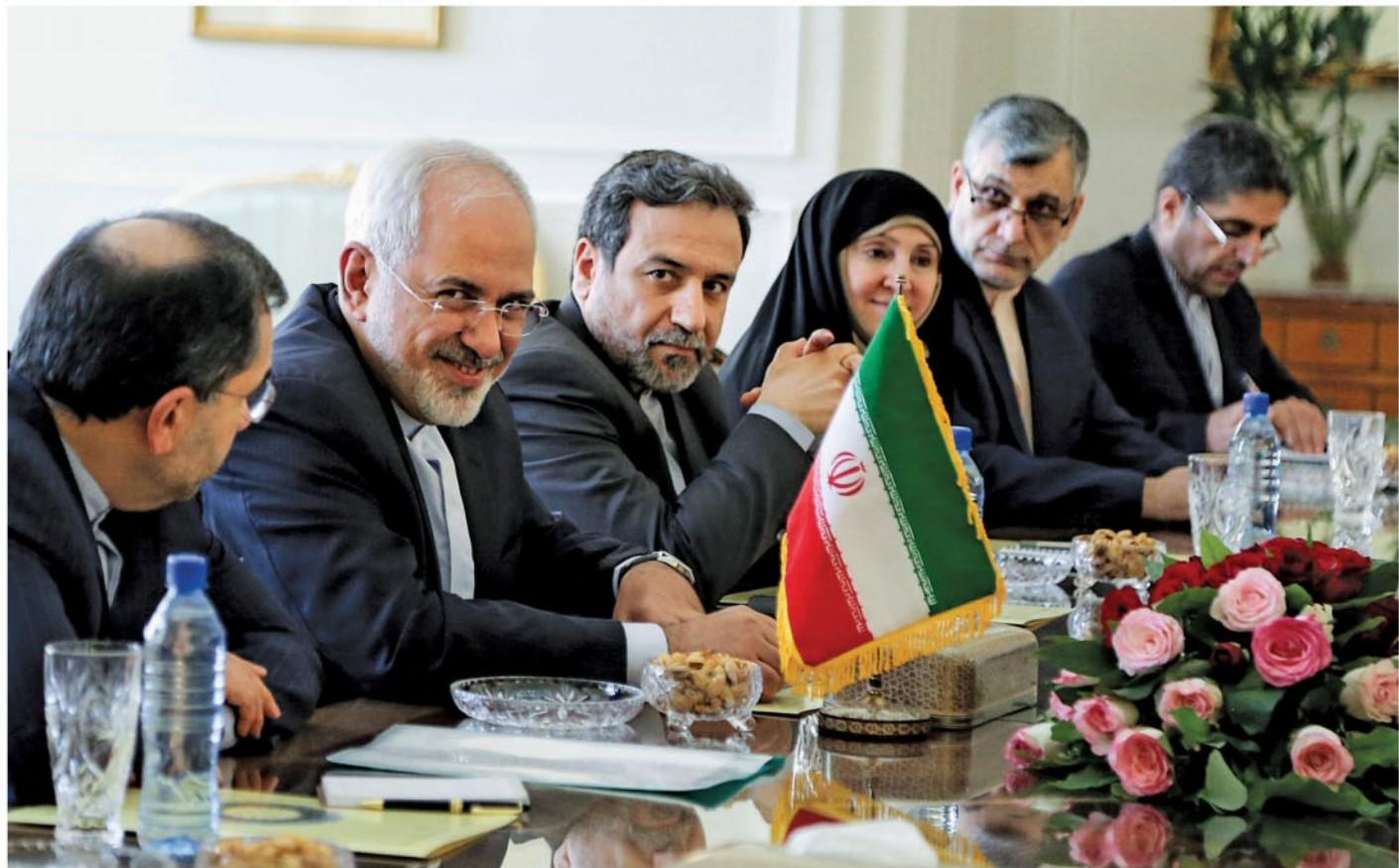
SHAWN BALDWIN / THE NEW YORK TIMES/REDUX

BY

**JONATHAN BRODER**  
@BroderJonathan



**SUPREME LEADER:**  
Ayatollah Ali Khamenei,  
seen here in a mural  
in Tehran, endorsed the  
nuclear agreement.



and Yemen. "I know that a Middle East that is on fire is going to be more manageable with this [nuclear] deal, and [it] opens more potential for us to be able to try to deal with those fires," Kerry told the Council on Foreign Relations on July 28. Aides say he's also eager to give Israeli-Palestinian peace talks another try.

But former officials and experts caution that the diplomatic challenges facing Kerry in the Middle East in the wake of the agreement promise to be even more difficult than the Iran negotiations. David Rothkopf, CEO and editor of the FPP Group, which publishes *Foreign Policy*, argues the deal has strengthened Iran considerably, first by lifting its pariah status and opening the way for European countries, along with China and Russia, to once again do business with Tehran. The agreement will also add some \$150 billion in unfrozen assets to Iran's coffers, providing it with the means to fund its regional proxies, including embattled Syrian President Bashar Assad, Lebanon's political and militant group, Hezbollah, Shiite militias in Iraq and Houthi rebels in Yemen. And all this is happening as Iran's Sunni Arab neighbors have been weakened by wars, revolutions and the declining price of oil. "Everybody involved—the Iranians, the Europeans, the Chinese, the Russians, the Israelis, the Saudis—is looking at the post-deal lay of the

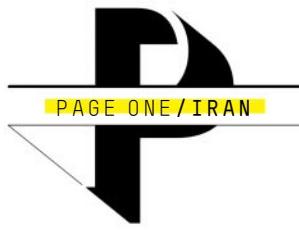
land in the Middle East as significantly different from what it was before the deal," says Rothkopf.

As Obama implements the nuclear accord, Rothkopf warns, he also will need to find ways to offset Iran's increased strength and influence in a region undergoing enormous upheaval. "U.S. national interests are not advanced simply by one deal," he says. "They're advanced in the context of everything that's going on."

Washington's first moves will involve strengthening the defenses of allies in the region. The Pentagon is already fielding a Saudi request for 600 Patriot missiles at a cost of \$5 billion—the first of several expected arms deals with Arab allies in the Persian Gulf. The administration is also expected to boost military sales to Israel beyond the \$3 billion in weapons it already receives annually. But Middle East experts say such weapons sales won't be enough to manage the broad power shifts in the region. In the coming years, the biggest challenge in the region will be rebuilding war-devastated Syria, Iraq, Yemen, Libya. If that doesn't happen, these places will become breeding grounds for violent extremists, much like those areas of Iraq and Syria now under the control of ISIS. Longer-term solutions will be necessary, these experts say, and they will require Iran's cooperation.

There are signs that Washington and Tehran are already moving in that direction. Until now,

+  
**TALK, TALK:**  
Kerry will likely  
be seeing a lot  
more of Iranian  
Foreign Minister  
Mohammad Javad  
Zarif, second from  
left, as the U.S.  
seeks to resolve  
crises elsewhere  
in the region.



the Obama administration has refused to allow Iran any role in a U.S.-proposed political solution for Syria. (The U.S. wants Assad and his top lieutenants to step down and a managed transition to a new government to occur.) But in his July 15 news conference—just a day after the Iran nuclear deal was announced—Obama offered the Iranians a seat at the table. “I think that it’s important for them to be part of that conversation,” he said.

A solution to the Syrian problem also requires the participation of Russia—which supports Assad—as well as Turkey, Saudi Arabia and Qatar, which back the Syrian rebels. Some observers believe Russia could be convinced to abandon Assad, provided Moscow gets to maintain its naval base in Syria’s Mediterranean port city of Tartus and its commercial arms relationship with the next government. Iran also might be persuaded to step back from Assad, but it would insist on maintaining its weapons pipeline through Damascus to Hezbollah, which threatens Israel’s northern border. Kerry would be hard-pressed to overcome Israeli objections to such an arrangement. There are also concerns that Assad’s departure could cause the government to collapse altogether, eliminating the prospect of a successor regime from within its ranks.

U.S. cooperation with Iran in the fight against ISIS predates the nuclear accord. Under a tacit alliance between Washington and Tehran, U.S. warplanes have been conducting airstrikes against ISIS positions for more than a year now while Iran-backed Shiite militias have fought the group on the ground. U.S. military officials say they provide air support only to Shiite militias that are under Baghdad’s command, but in the March fight for the city of Tikrit and in later battles, American warplanes helped fighters under Iran’s control. Closer coordination with the Shiite militias, however, could present Obama with political problems at home since U.S. military officials haven’t forgotten that hundreds of American troops died at the hands of the Shiite fighters during the Iraq war.

In Yemen, the U.S. says it is providing logistical and intelligence support to a Saudi-led military campaign against Iran-backed Houthi rebels. But quietly, the administration is urging Riyadh to stop its offensive. In late May, *Newsweek* has learned, Anne Patterson, the assistant secretary of state for Near Eastern affairs, secretly met with senior Houthi officials in Oman. Shortly afterward, the Houthis released journalist Casey Coombs, one of several Americans the Houthis

are believed to be holding, in return for additional U.S. pressure on the Saudis to halt their bombing campaign, Western diplomatic sources say.

Peter Feaver, a former official on President George W. Bush’s National Security Council and a critic of the Iran deal, says the success of such diplomacy—and Kerry’s place in the pantheon of great secretaries of state—will depend on whether he can make the agreement part of a larger strategy that realigns Iran according to U.S. national security interests. He’s not optimistic. “It’s a gamble that bets against history and that bets against Iran’s pattern of behavior,” he says. “And it’s a gamble that is riskier than it needed to be because we could have had a better deal.”

Defending the nuclear accord before Congress in July, Kerry recounted the moment of quiet reflection in Vienna’s ornate Palais Coburg hotel after he and fellow diplomats from Iran and five major powers reached the nuclear agreement. French Foreign Minister Laurent Fabius noted that the date of the agreement was July

## KERRY IS OPTIMISTIC ABOUT WORKING WITH IRAN TO ADDRESS THE CONFLICTS IN SYRIA, IRAQ AND YEMEN.

14—Bastille Day, which marked the beginning of the French Revolution in 1789. Fabius then expressed confidence that the Iran deal would create another historical marker.

Maybe. But for now, most observers are reserving judgment. Aaron David Miller, who served as a Middle East adviser to both Democratic and Republican administrations, says the agreement remains “transactional” at this point, a business deal in which each party gets something from the other. In other words, Nobel Peace Prize or not, Kerry is likely to go through a lot more pain before the deal ever leads to a true détente between the U.S. and Iran. ■

**SPY TALK**

## **THE OLD SEX DOLL SPY TRICK**

In Moscow, CIA operatives needed a clever ruse to fool the KGB—and they found one

OF ALL THE many missions Walter McIntosh undertook in his long CIA career, buying life-size rubber sex dolls in a Washington, D.C., porno shop was maybe the most memorable.

It was for a good cause, of course, and deadly serious, both for Langley and for McIntosh, who headed the CIA's disguise unit from 1977 to 1979. The agency's Moscow operatives were in desperate need of something—anything—to trick Russian counterspies into leaving them alone, if only for a few minutes, so they could meet their secret agents without fear of being arrested. A key operation was in peril.

Enter the inflatable sex doll. Tricked out with an ersatz mouth and vagina, the life-size rubberized playthings have been pleasuring lonely men for a century. Modified to a male likeness, appropriately clothed and rigged up with primitive airbag technology to pop them, inflated, out of a container, the “jack-in-the-box,” or JIB, was adapted by the CIA for its espionage war with the KGB, the former Russian secret police and intelligence agency.

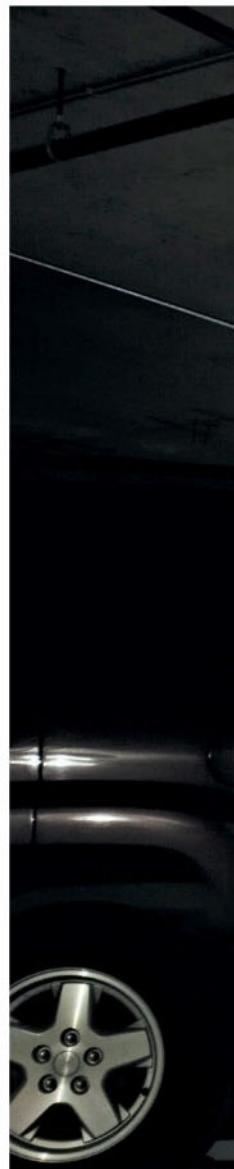
The idea was that a CIA officer en route to a secret meeting would take a JIB along in his car, deflated and sealed inside an innocuous looking package. A colleague would be at the wheel. With KGB goons customarily following them, they needed to find a way for the operative to slip out of the car unnoticed. The first—and key—task was to slowly add distance between them

and their surveillants to create what CIA operatives called “a gap.” At some point, the operative in the passenger seat—they were almost always men during the Cold War—would crack open his door as they rounded a corner and slip out, disguised as an ordinary Muscovite. The driver then triggered the JIB, putting a lifelike dummy, fedora and all, in his place. The KGB would be none the wiser—at least for a short time.

The existence of the JIB was disclosed by Robert Wallace, a former head of the CIA's Office of Technical Service, and H. Keith Melton, a CIA consultant, in their 2008 book, *Spycraft*. But its full provenance has not been revealed until now.

McIntosh says he developed the JIB for the CIA, but credited two Hollywood costumes specialists, Les Smith and John Chambers, with the original idea. Chambers was a real-life Hollywood make-up maestro who surfaced as the character played by John Goodman in *Argo*, the 2012 thriller based on the CIA's rescue of six American hostages from Iran. But the CIA's connections to Smith, the proprietor of Owen Magic Supreme in Azusa, California, a specialty equipment store near Los Angeles, has never before been made public. “He was an illusion-maker for most of the top magicians,” McIntosh says of Smith, who died in 2008. Boxes to hide things or “saw” people in half, that sort of thing, according to the company's Web page. He and Chambers did CIA work as a secret sideline.

Their idea was...magical. But the CIA was



BY  
**JEFF STEIN**  
 @SpyTalker



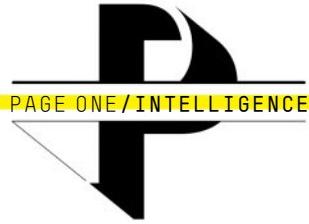
**SEX SPY:** This gentleman is probably not a CIA agent gathering materials for a jack-in-the-box decoy dummy, but you never know.

counting on McIntosh, a seasoned field operative, to turn their idea into a workable espionage tool. "They needed someone who actually understood field operations to run [the disguise unit], as it had gotten a bit out of hand with theoretical and pie-in-the-sky projects," he says.

McIntosh first needed to get his hands on a sex doll. And it wasn't an errand he could dump on his assistant. "My secretary in those days was a very nice, prim and proper lady of high religious upbringing," recalls McIntosh. "She was one of those people that was always volunteering to do the extra chore. But I just could not see sending her out to buy sex dolls. So I just strolled about until I saw a sign, Adult Book Store, and sure enough they had a selection of sex dolls."

**"I JUST STROLLED ABOUT UNTIL I SAW A SIGN, ADULT BOOK STORE, AND SURE ENOUGH THEY HAD A SELECTION OF SEX DOLLS."**

The shop was "very close to George Washington University," he says, but he couldn't recall its name. He paid cash. The clerk thought it was odd that he asked for a receipt. "But what was a bit embarrassing was my several returns for additional dolls," McIntosh says. Like the mad scientist in *Ex Machina* who uses junked parts to build a mannequin with artificial intelligence,



McIntosh had to keep supplying the CIA techies with sex dolls. "We went through quite a few in preparing a prototype," he recalls. "As I was buying four or five at a time and often over a period of a few weeks, I am sure I got quite a reputation."

The sex doll could look human for a while, at least from the rear, and at night, from a trailing KGB car. But the hard part of the trick was rigging the doll to pop up with the touch of a button. The CIA turned to a private company in St. Louis that was developing airbags. "It was quite tricky, in that it had to pop out of a briefcase, not be too springy or balloon like, but not to leak or sag, either," McIntosh says. After lots of trials, the engineers were confident it would work.

In December 1982, "Jack" went into service in Russia. "The jack-in-the box...worked," writes David E. Hoffman, author of *The Billion Dollar Spy*, a dazzling new account of one of the CIA's most valuable Cold War espionage operations. At the center of that drama was Adolf Tolkachev, code-named Sphere. From 1979 to 1985, when he was betrayed by CIA turncoat Aldrich Ames, Tolkachev stole thousands of technical documents that saved the Pentagon a billion dollars' worth of research and development costs, Hoffman writes.

But for several months in 1982, the CIA was unable to contact him. "Heavy, but apparently routine, KGB surveillance of CIA case officers in the latter half of 1982 forced several planned meetings to be aborted," according to an official CIA history of the affair. The Moscow station desperately needed a personal meeting to see if he was all right and collect his miniature film of stolen documents. The JIB had to work.

One night in December 1982, two CIA officers in a car trailed by the KGB turned a Moscow street corner. The CIA man in the passenger seat opened his door and hopped out. Almost simultaneously, the driver popped Jack up from its compartment, in this case a phony birthday cake. The KGB sleuths were faked out, according to Hoffman's riveting account, and kept following the car until it returned to the American embassy. The other CIA man made it to his meeting with Tolkachev.

"The completion of Jack was likely one of the

high points of my two-year stint as chief of disguise," says McIntosh, who went on to assignments in Southeast Asia, including as chief of Vietnam operations. Jack became so commonplace in the CIA that in 1985, one disaffected former employee, Edward Lee Howard, rigged up his own version to elude FBI surveillance and defected to the Soviet Union.

Alas, such magic tricks aren't much use anymore. The contemporary world of ubiquitous electronic surveillance—not just traffic and shopping mall cameras, but email tracking, real-time GPS locating, and digital retina scans and fingerprinting at airports—have pretty much relegated the JIB, wigs and latex facial implants to the CIA's attic. "It's got to be incredibly difficult to use aliases and disguises," says former CIA operative Patrick Skinner, now director of special projects for the Soufan Group, a private intelligence organization headed by FBI, CIA and MI6 veterans. "The cameras are so ubiquitous you don't even know when you're not under surveillance, so when would you put on your disguise in an operation?"

In any event, notes McIntosh, disguises and other tradecraft paraphernalia can go quickly out of date. In the mid-1960s, he says, the CIA closed

"THE SEX DOLL COULD  
LOOK HUMAN FOR A WHILE,  
AT LEAST FROM THE REAR,  
AND AT NIGHT, FROM  
A TRAILING KGB CAR."

a five-story warehouse on the far side of Capitol Hill that was stocked with obsolete items agency operatives once needed for traveling incognito, and discarded much of its contents. "That was filled floor-by-floor with clothing, shoes, food-stuffs and so on from different denied areas of the world," McIntosh recalls. "One whole floor just had Cuban clothing."

McIntosh, now living in New Zealand, where he and his wife run a bed-and-breakfast and art gallery, thought all that material shouldn't go to waste. "I tried in vain to get the agency to donate the clothing to Salvation Army or whatnot," he says. "But it all went to the incinerator." ■

Newsweek national security correspondent **JEFF STEIN** was a military intelligence case officer in South Vietnam.



## Frisbee Fever! Catch It!

FLYING DISC SPORTS PLAYERS INCH A STEP CLOSER TO OLYMPIC GLORY

At the first modern Olympics in Athens, Greece, in 1896, spectators watched 300 top athletes battle for gold in nine sports, including gymnastics, swimming and tennis. While those remain mainstays of the games, the rest of the Olympic roster has fluctuated, with sports like roller hockey and live pigeon shooting dropping out and beach volleyball now a fan favorite.

Being included in the games is "an incredible milestone" for emerging sports, says Robert "Nob" Rauch, president of the World Flying Disc Federation, which just

won recognition by the International Olympic Committee, paving the way for Frisbee sports to possibly be played in future Olympic Games. Being an IOC-recognized sport doesn't automatically mean a shot at Olympic gold, though. Members of the Association of IOC Recognised International Sports Federations can often sit on this list for years without making an Olympic debut. Chess received its IOC recognition in 1999, billiards in 1998, yet neither has been played at the international games.

Frisbee (or more technically, "flying disc

sports") was among the 26 sports that applied for inclusion in the 2020 Summer Olympic Games in Tokyo, along with American football, bridge and tug-of-war. That list was whittled to eight in June. Frisbee didn't make the cut. Sports fans will find out in August 2016 which of the short-listed sports—baseball, bowling, karate, roller sports, sport climbing, squash, surfing and wushu (Chinese martial arts)—will compete.

The number of sports at the 2016 Summer Olympic Games in Rio is 28. Core sports can contain multiple dis-

ciplines—aquatics, for example, includes swimming and diving. There are two new additions to next year's games: golf and rugby sevens.

Recognition by the IOC can bring additional funding and publicity, but that's not quite the same as an Olympic medal. "There is nothing like representing your country and playing with the best athletes in the world," says Brodie Smith, who plays for the Chicago Wildfire Ultimate Frisbee team. "Now that dream just became a little closer to a reality."

BY

LUCY WESTCOTT  
@lvzwestcott

SOURCE: INTERNATIONAL OLYMPIC COMMITTEE

## THE BLOWHARDS HELPING ISIS

# U.S. politicians screeching about 'Muslim extremists' are the Islamic State's best recruiting tool

**THE WORLD** has to confront an increasingly intractable problem: the growing threat from radical Christian terrorists who have slaughtered thousands of innocents. There's the loose affiliation of terror groups tied to the Christian Identity movement, as well as the Orange Volunteers, the Army of God, the Phineas Priesthood and many, many others. And those are just the home-grown organizations—Christianity has inspired violent groups overseas that murder and behead people, and rape and kill young children. The Lord's Resistance Army, a radical Christian group, has committed thousands of murders and kidnappings in the name of Jesus. There's also the Church of Almighty God in China, the National Liberation Front of Tripura in India and other Christian terrorist organizations around the globe.

On top of those are the "lone wolf" terrorists inspired by Scripture filled with calls for violence, including murdering nonbelievers and those who don't honor the Sabbath, slicing open the bellies of pregnant women and celebrating the bashing of babies to death on rocks. There's Eric Rudolph, Scott Roeder, Paul Jennings Hill—all murderers for Christ. Anders Behring Breivik killed 77 people in Norway, proclaiming he was seeking to create a "monocultural Christian Europe."

Christians often deny that these acts of terrorism have anything to do with Christianity and state that theirs is a religion of peace, but they fail to strongly condemn the violent actions. Plenty

refuse to even denounce the murder of doctors who provide health care services that the devout oppose. And the greatest financial support for the radical Catholic terrorists in the Irish Republican Army came from American Christians. Despite the IRA's murder of 1,800 people, American politicians proved they were soft on terrorism. Representative Peter King of New York even went to Ireland and hung out with the group's sympathizers. Fortunately, the British were tough and used enhanced interrogation techniques—including waterboarding—on these radicals.

Offended by what you've just read? Good. You're supposed to be. That diatribe, while all true, is horrific. Sadistic lunatics, whether as individuals or groups, have nothing to do with Christianity. They have just appropriated a peaceful religion to justify their murderous impulses.

Don't think, though, that this is about to become a false equivalence of the terrorism undertaken by self-identified Christians and Muslims. Sunni extremists accounted for 70 percent of all terrorist killings in 2011, or 8,886 people, according to the most recent unclassified report by the government's National Counterterrorism Center; the number of Christian terrorists is so small that the NCC does not give it an individual category, although this was the year of the Breivik massacre. For Muslims, though, the most important number is how many devotees of Islam who do not commit terrorist acts them-



BY

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selves are inclined to support the religious teachings of those who do. In Europe alone, according to Angel Rabasa, a senior political scientist at the Rand Corporation, 1 percent of all Muslims are at risk of becoming radicals because they sympathize with the fundamentalist teachings that preach violence. That percentage may seem low, but given that Islam has 1.6 billion adherents, the number of Muslims open to violence is far too high. Based on Rabasa's analysis, more than 300,000 Muslims in Europe could be radicalized, a dangerously large group of nonviolent people who could be pushed over the edge toward terrorist acts.

So the point of the "Christian terrorists" rant is to prove a point about national security imperatives in the face of violent attacks by some Muslim sects and the abject ignorance of some prominent Republicans who insist that, by avoiding the phrase "radical Islamic terrorists," the Obama administration is soft on ISIS,

Al-Qaeda and others. This GOP demand for its own form of political correctness feeds into what the Islamic murderers want, intelligence experts say, because it helps them portray the Western fight against terrorist groups as a war on Muslims. In fact, with the endless parsing of language

## SADISTIC LUNATICS HAVE APPROPRIATED A PEACEFUL RELIGION TO JUSTIFY THEIR MURDEROUS IMPULSES.

about terrorism—such as criticizing Obama for calling the Benghazi attack an "act of terror" rather than "a terrorist act" (or was it the other way around?)—the GOP PC police have shown themselves willing to undermine America's fight against psychopathic monsters to score political points with the uninformed.

Take a moment to reflect. If the harangue above about Christian terror were repeated again and again—on television, in daily encounters, even by the president—how many of those inclined to violence would feel their religion was under attack? That is the challenge the world faces in dealing with the rise of radicalism among some practitioners of Islam. The goal is to *decrease* the appeal to Muslims of radical interpretations of Islam, not to reinforce the message of terror groups. Equating all of Islam with terrorism, insulting the religion and Muhammad, burning Korans—each act of disrespect brings smiles to ISIS leaders. Yes, they are offended, but they know they have been given another gift—like the invasion of Iraq—that helps recruit more fighters. "There has never been a group as adept at using our own words against us for propaganda purposes" as ISIS, says one former senior official with American intelligence. "Every time some person in authority insults their religion, they can

**OUR CROSS TO BEAR:** Even though many extremists groups such as the Ku Klux Klan attempt to justify their violence with Christian doctrine, few people claim Christianity is a violent religion.

TY CACEK/REDUX





inspire Muslims in tune with the radical message to start planning an attack."

In fact, using sloppy language to describe these terrorists—particularly the words Republicans are demanding Obama use—can reinforce the idea among nonviolent fundamentalists that joining the fight being waged by ISIS and other terrorists is a noble cause. "Language and terminology matter," says a 2013 report from the Qatar International Academy of Security Studies, a consulting organization used by governments and private industry. "It is important to refrain from using terms such as 'radical' or 'jihad,' as the words may traditionally have positive connotations."

That is why Obama and George W. Bush carefully chose their words when discussing terrorism perpetrated by Muslims, avoiding statements that might be perceived as insults. "We are not at war with Islam," Obama said in February at the White House Summit on Countering Violent Extremism. "We are at war with people who have perverted Islam."

Bush said much the same. "This great nation of many religions understands, our war is not against Islam, or against faith practiced by the Muslim people," he said in 2002. "Our war is a war against evil."

This intelligent approach when speaking about terrorism is now more essential than ever. The media tactics of ISIS—whose top ranks include many former Baath Party members who were senior officials under the Iraqi dictator Saddam Hussein—have created an unprecedented need for linguistic care by American politicians. This organization has established an astonishing presence on social media, reaching millions with the argument that America and its allies are attacking Islam and only those who support them are true Muslims. "The media effort of the Islamic State is an integral and essential part of its operations, on a par with its military and administrative effort," wrote Richard Barrett, a former British intelligence officer and head of the United Nations monitoring team concerning Al-Qaeda and the Taliban, in a 2014 report for the Soufan Group, a security consulting firm. "In this respect it is greatly helped by the decentralized nature of social

media (particularly Twitter), which has allowed each of its supporters effectively to create and operate his/her own ministry of information, echoing a standard party line as well as creating and spreading their own memes and messages. In effect, the Islamic State is crowdsourcing its propaganda. There is no precedent for this."

Thus, every time some politician—out of ignorance or cynicism—directly links Islam to terrorism or unknowingly ties radicalism to glory or jihad to martyrdom, ISIS and their ilk have more evidence to win converts. And unfortunately, a lot of the simpletons helping terrorists gain more supporters are candidates for the Republican presidential nomination, meaning much of their destructive blathering receives

## "THE ISLAMIC STATE IS CROWDSOURCING ITS PROPAGANDA."

dissemination over national television.

"This president seems to bend over backwards to want to avoid saying that. He won't even say the words 'radical Islamic terrorism,'" said Bobby Jindal, the governor of Louisiana. "He's always afraid of offending everybody rather than doing his job."

Senator Lindsey Graham of South Carolina, another GOP presidential candidate, has demonstrated a fairly keen understanding of the intricacies of dealing with global terrorism, but too often he joins in with his braying co-contenders. "I've never been more worried about my country than I am today in terms of radical Islam," Graham said on ABC's *This Week*. "And yes, it is radical Islam."

Senator Ted Cruz of Texas did the same, proclaiming that Obama is "an apologist for radical Islamic terrorists," blasting the administration's rhetoric and approach to ISIS.

And it is not just those in the presidential ring mouthing this foolishness. Indiana Governor Mike Pence—perhaps the only Republican politician *not* running for president—joined in on this "Hallelujah" chorus of foolishness, slamming Obama for being "unwilling to call Islamic extremism what it is."

And so politicians kowtow by mouthing the platitudes the arrogant but ignorant want to hear. And somewhere in the world, maybe in your hometown, a previously nonviolent fundamentalist Muslim will feel the call to join the fight. ■

## BOMBS A OUI!

France has become Europe's biggest arms dealer

**THE CANCELLATION** of a deal like the 1 billion euro contract to sell two Mistral warships to Russia would have left a considerable hole in the pocket of most arms exporters, but France is still on course to end 2015 as the most prolific arms seller in Europe.

It is telling that as the Mistral deal was scrapped earlier this month, French President François Hollande answered reporters' questions from Egypt, where he was celebrating the opening of the new Suez Canal with Egypt's new French-made Rafale jets flying overhead. The jets, delivered less than two weeks before, were the first of 24 aircraft purchased by the Egyptian armed forces from France in a deal that dwarfs the Mistral contract.

Just in June, during a visit to France, Saudi Arabian Deputy Crown Prince Mohammed bin Salman signed off on 10 contracts with French arms sellers, including a deal for 23 Airbus H145 helicopters. In May, Qatar ordered 24 Rafales, and French Defense Minister Jean-Yves Le Drian said India was due to place an official order



for yet more Rafales by the end of the year.

"The French Ministry of Defense says that French arms sales rose by 18 percent in 2014, the country's best export performance for 15 years," says Bilal Y. Saab, a Middle East security expert at the Atlantic Council, who notes that French sales overtook Germany's last year. Statistics from the government showed sales of more than 8 billion euros in 2014, the highest since it started publishing the data in 1999. Le Drian told public broadcast channel BFMTV in June that it was likely French arms exports would exceed 15 billion euros in 2015.

Benoit Gomis, an international security consultant and associate fellow at London's Chatham House who has also worked in the strategic directorate of the French Ministry of

Defense, says he believes the French state's role in these deals is crucial. "The government itself is at the heart of all these sales, more so than other countries," he adds, noting that Hollande needs to do whatever he can to boost the economy and cut unemployment.

The French state is the majority shareholder (63 percent) of naval manufacturer DCNS, which won a 1 billion euro contract to supply Egypt with a FREMM frigate earlier this year. The government also holds shares of Airbus and the Thales Group, and has some influence on family-owned Dassault Aviation, which manufactures the Rafale jet, since Airbus has shares in it.

Frequent visits to French arms clients by Hollande, Le Drian and Foreign Minister Laurent Fabius have strength-

ened ties between France and its new Middle Eastern and Asian client base, according to Saab, pointing to Hollande's invitation to the Gulf Cooperation Council's May summit in Riyadh, Saudi Arabia. "He is the first foreign leader to attend the summit, and Hollande's attendance at a ceremony in Doha before the GCC summit was even more significant," Saab says, referring to the annual economic summit of Saudi Arabia, Qatar, Bahrain, Kuwait, Oman and the United Arab Emirates.

"This rapprochement helped Paris sell Doha 24 Rafale fighter jets and other military equipment worth \$7 billion," Saab says. "France is doing better than all other European countries because it's matching its arms sales with political engagement. That's what you call Defense Diplomacy 101." ■

## **DISBANDED BROTHERS**

# Can the Muslim Brotherhood survive Egypt's attempts to crush it and calls to abandon its policy of nonviolence?

**IN THE FOUR** years since the Arab Spring, Egypt's Muslim Brotherhood has gone from the streets to the presidential palace and back again. Now, with its leader sentenced to death and its followers persecuted by President Abdel-Fattah el-Sissi's regime, the Muslim Brotherhood is at a critical juncture. Will it be destroyed? Will it give up on its doctrine of nonviolence? Or will it just fade away, its younger members drawn to more radical movements such as ISIS?

Under el-Sissi, Egypt is enduring what Human Rights Watch's Joe Stork calls "a human rights crisis that is the worst in memory." While el-Sissi remains popular, peaceful assemblies are outlawed; police shoot demonstrators and abuse thousands of political detainees with impunity. Since the military coup of 2013 that overthrew the Brotherhood's Mohammed Morsi, the country's president, Egypt has been racked by violence between Islamists and security forces.

Anyone opposing the regime faces severe repression, but the Muslim Brotherhood is particularly targeted. "The new regime moved very quickly to decapitate the organization, which meant arresting the top three tiers of the organization," says Eric Trager of the Washington Institute for Near East Policy. Since Morsi's fall, tens of thousands of members have either been detained or fled into exile, and only a minority of the Brotherhood leadership has managed to escape, mainly to Istanbul.

Their leader, Mohammed Badie, was sentenced to death in April 2014 along with 682 other Morsi supporters in a trial that lasted just eight minutes. The thoroughly politicized courts have also sentenced Morsi to death, in May 2015. By comparison, Hosni Mubarak, the country's dictator for 30 years, got three years for corruption charges.

Yet Brotherhood supporters remain defiant. Mustafa el-Nemr, a former Muslim Brotherhood activist now in Turkey, who was imprisoned under el-Sissi, predicts people will fight back. "Over 100,000 families have a direct cause to seek revenge from el-Sissi's regime, so it's nearly impossible to control them all," he says.

According to a former Brotherhood activist, who left the organization four years ago "because the structure was not democratic," the Brothers are holding together despite the repression. "This kind of oppression works as a glue," says Abdelrahman Ayyash. "The regime is stupid—they are keeping the Brothers going."

After the toppling of Mubarak in 2011, the Freedom and Justice Party, the political arm of the Muslim Brotherhood, won a sweeping victory in the first democratic parliamentary elections in the country's history, followed by the election of Morsi, their presidential candidate. The formerly outlawed Brotherhood was suddenly on top.

However, Morsi was accused of putting self-interest before the country, and many Egyptians

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**REPRESSED:** A crackdown on the Brotherhood since the 2013 coup has radicalized younger members of the organization, which was one of the region's most influential nonviolent Islamist forces.

perceived him as failing to tackle economic issues. By 2013, thousands were once again in the streets, protesting the Brotherhood's autocratic tendencies. In July 2013, the military seized the opportunity provided by the public's discontent and ousted Morsi.

The summer descended into a bloodbath. Brotherhood supporters, outraged by the coup, protested in the streets but were mowed down by police. The violence culminated on August 14, when security forces stormed a sit-in outside the Rabaa al-Adawiya mosque in Cairo. They killed over 800 civilians in what Human Rights Watch called a crime "equal to or worse than China's Tiananmen Square killings in 1989."

**GOVERNMENT HOSTILITY** is hardly new to the Brotherhood. Founded in 1928 by Hassan al-Banna as a force to resist British domination, the organization grew quickly but fell out with the nationalist military leaders who took charge in 1952, after the British-backed King Farouk abdicated. The group's members went under-

## HUMAN RIGHTS WATCH CALLED THE SWEEP "EQUAL TO OR WORSE THAN CHINA'S TIANANMEN SQUARE KILLINGS IN 1989."

ground, surviving under various regimes—persecuted under Gamal Abdel Nasser (1956 to 1970), whom the Brothers tried to assassinate in 1954; kept in check by Anwar Sadat (1970 to 1981); and initially tolerated by Mubarak (1981 to 2011). That détente ended when the Brothers won a shocking 20 percent of the Parliament seats in 2005 elections, and Mubarak lashed out.

As a result of decades of repression, the Brotherhood has developed a tight-knit organization.

"You don't just sign up for the Brotherhood, it's a serious process," says Shadi Hamid, a Middle East expert at the Brookings Institution.

Aspiring members have to go through five to eight years of indoctrination before reaching full membership. The Washington Institute for Near East Policy's Trager says the organization "seeks to Islamize the individual through its rigid indoctrination process, and then the families, the society, the state and finally the world."

Part of the Brotherhood's appeal is its mix of political Islam and social work—it officially renounced violence in the 1970s and, like Hezbollah in Lebanon and the Palestinian group Hamas, earned goodwill by running schools, sports clubs and other social services. The formula has spread to many countries, from Senegal to Russia, and in Egypt today, Hamid estimates, the Brotherhood has somewhere around 500,000 members, many of whom contribute up to 15 percent of their salary monthly.

Even if el-Sissi's crackdown doesn't kill the organization, it will probably alter it fundamentally. For a long time, the Muslim Brotherhood has faced an ideological challenge—a split between those who stand true to the Brotherhood commitment to nonviolence and those who consider violence to be legitimate in certain situations.

Hamid says the organization's decapitation by el-Sissi's regime has forced a generational shift. "With the old guard leadership abroad or in prison, younger members in Egypt have had to rise to the occasion out of necessity and assume leadership."

Among this new leadership are some who advocate a "defensive violence" doctrine, with the aim of destabilizing the el-Sissi regime by attacking infrastructure, such as the power grid, and exacting revenge on the security forces. "If you're a 60-year-old Brother, you've had the nonviolence doctrine drilled into you for decades, but if you're 22 and have only been in the Brotherhood for three years, you feel less bonded to it," Hamid says.

Many think this new approach is playing into the hands of the regime. Ayyash, the former



Brotherhood member, says the organization's leadership lacks control over its members. "It's completely decentralized. I have been talking to a few members and leaders, and when I was asking them, 'Why don't you intervene to calm down the youth in Egypt?' they said, 'Everyone in Egypt is on their own.'"

There is a risk that disenchanted members might leave the Brotherhood for ISIS. This hasn't happened to a significant extent, which according to Hamid is due to the group's strong hierarchy and the loyalty of its members.

Other countries in the region are watching closely. The Brothers have been one of the few nonviolent political forces in the Middle East, and one of the best organized. They are the sworn enemies of major players like the Saudis, who provide

**STRIKING BACK:**  
Public prosecutor Hisham Barakat was killed in a June car bombing that came as Egypt battles an increasingly active branch of the Islamic State in the Sinai Peninsula.

## THE ORGANIZATION "SEEKS TO ISLAMIZE THE INDIVIDUAL... AND THEN THE FAMILIES, THE SOCIETY, THE STATE AND FINALLY THE WORLD."

the el-Sissi regime with billions of dollars in support. Although Saudi policy on the Brotherhood may be softening as King Salman focuses on combating a sanctions-free Iran, the Brothers remain a potential threat to the Saudi monarchy.

"The Muslim Brotherhood is an organized religious opposition and support democratic elections—the Saudis don't like either of those things," Hamid says. ■

## Names in the News

UP, DOWN AND SIDEWAYS

 @WisdomWatch



### NORTH POLE



Russia files U.N. application renewing claim to huge chunk of Arctic that extends 350 nautical miles beyond Russia's shoreline. U.S., Canada, Norway and Denmark dispute icy landgrab, which is related to melting of polar ice cap. Shirtless President Vladimir Putin was just spotted driving Santa's sleigh.

### MULLAH OMAR

 Former Taliban chief hid out for three years in Karachi, Pakistan, selling potatoes in green market, Pakistani intelligence operatives say, and refused help from Taliban. The walls have eyes, and so do the spuds.



### SUBWAYS

 Woman heading to hospital goes into labor underground at train station in New York City. Emergency medical folks clear platform, and minutes later help her deliver healthy baby girl. Get that tube tied!



### THE NASTY

 Scientists have found earliest known organism to procreate. Fossil evidence suggests that things have been doing it for 565 million years. The 40-year-old virgin must feel even worse now.



### JESTERS

 U.K. town appoints first jester in 700 years. Russel Erwood gets title after showing he can juggle daggers blindfolded, balance sword on chin and make gold coin disappear. Says Mr. T, "I pity the fool."



### DELTA

 In wake of the shooting of Cecil the lion in Zimbabwe, airline bans shipments of big-game hunting trophies, which means no more carion in your carry-on. But they still can't fix those "talkers."



# TOXIC FASHION

IF YOUR T-SHIRT  
READS "MADE IN INDIA,"  
YOU MIGHT HAVE  
CONTRIBUTED TO A DEADLY  
ENVIRONMENTAL CRISIS

BY ADAM MATTHEWS



# A

**APPROACH THE MASSIVE** Orathupalayam Dam by road, and it quickly becomes clear that something has gone terribly wrong. Within 2 miles of the dam, the lush rice paddies, coconut palms and banana trees that have characterized this part of southern India suddenly give way to a parched, bright red landscape, dotted only with scrub forest. The Noyyal River, which used to be clean and clear, now runs foamy and green, polluted with the toxic runoff of the titanic textile industry 20 miles to the west, in Tirupur.

At first glance, Tirupur, aka "Knit City," appears to be an exemplar of how globalization can improve the developing world. The garment industry here in the south Indian state of Tamil Nadu earns billions of dollars annually, employs about a half-million people and exports clothes to Europe and the United States. Chances are good that if you have a Gap, Tommy Hilfiger or Wal-Mart T-shirt marked "Made in India," it came from here.

**KNIT CITY:** Tirupur, India, below, is home to many of the factories that dye clothing sold in the rest of the world. The chemicals used to bleach, right, and dye fabrics have destroyed local water sources.

American taxpayers have played a key role in turning Tirupur into a manufacturing powerhouse. In 2002, the United States Agency for International Development (USAID) loaned \$25 million to the government of Tamil Nadu and a local clothing industry group, the Tirupur Exporters Association, to finance a new water-delivery system. It kick-started a slew of investment into the project; a local consortium eventually raised an additional \$220 million. The U.S. consulate in Chennai in a 2006 press release explained that before the American intervention, the local industry "was running out of water, a critical input for dyeing and bleaching." As a side note, the release noted that the thousands of slum dwellers in the area could finally have access to treated, running water.

The USAID project, which piped in clean water from a stretch of the Noyyal in a nearby farming region, helped the local industry boom. Between 2002 and 2012, U.S. knitwear imports from India jumped from \$571 million to \$1.25 billion, and an estimated 56 percent of those garments came from Tirupur. But all that growth has had devastating consequences for the environment and people living in the area.

In early April 2013, I met the leader of the Orathupalayam Farmers Association, Chelliappan Udayakumar, near the Orathupalayam Dam. For generations, Udayakumar's family farmed this land, growing local crops such as rice, banana, coconut and turmeric. "There were good jobs and good livelihood," says Udayakumar. Now, "there is no cultivation of the land, no income." The small-scale agriculture lifestyle that characterized the region for centuries, he says, has "fully collapsed."

He walked me through Orathupalayam village, a small town at the base of the dam. Abandoned brick homes painted light blue and topped with red tile roofs dominated the main square. Plaques on the homes commemorated their erection—most date from the late 1980s, when construction of the dam began. Twenty-five years later, the Orathupalayam is one of over 60 villages that have been transformed into ghost towns.

The dam was supposed to update agricultural irrigation practices in Tirupur. But by the mid-2000s, the water was so saturated with chemicals, salts and heavy metals that local farmers were petitioning the Madras High Court—the highest court in Tamil Nadu—to not release the water into their fields. It was making farmland unusable, and it was making locals sick. In 2002 and 2003, a local university set up three camps to examine the health effects of the toxins downstream. In one of the camps, doctors found that about 30 percent of villagers suffered from symptoms—including joint pain, gastritis, problems breathing and ulcers—connected to waterborne diseases. A 2007 study by a local nongovernmental organization found that Tirupur's 729 dyeing units were flushing 23 million gallons per day of mostly untreated wastewater into the Noyyal River, the majority of which collected in the Orathupalayam Dam reservoir. When officials finally flushed the dam in the mid-2000s, 400 tons of dead fish were found at the bottom.





## ABOUT 30 PERCENT OF VILLAGERS SUFFERED FROM SYMPTOMS—INCLUDING JOINT PAIN, GASTRITIS, PROBLEMS BREATHING AND ULCERS—CONNECTED TO WATERBORNE DISEASES.

### COMICALLY CORRUPT

**A COUPLE OF WEEKS** after I visited Tirupur, on April 24, 2013, Rana Plaza, an eight-floor complex of clothing factories in Dhaka, Bangladesh, caved in, burying over 1,100 workers in the rubble. As the dead dominated newscasts, brands like Wal-Mart Stores Inc. and United Colors of Benetton momentarily defended their labor and safety records. Activists called for boycotts, and President Barack Obama even revoked Bangladesh's right to export certain clothing items to the U.S. without paying tariffs.

Rana Plaza resonated with American consumers. After all, even Bangladeshi women earning less than two bucks a day deserved to go to work in the morning confident that they would be alive that evening. But while the disaster did force Westerners to take notice of the plight of those who make their clothes, a larger environmental crisis in the region continued unnoticed—despite impacting many hundreds of millions of people.

According to Yixiu Wu, who helms Greenpeace's "Detox My

"Fashion" campaign, the average pair of jeans requires 1,850 gallons of water to process; T-shirts require 715 gallons. And after going through the manufacturing process, all that water often ends up horribly polluted. The textile industry today is the second largest polluter of clean water after agriculture, and it has an outsized effect on the people of Asia. In large part, that's because over the past two decades American clothing brands have steadily moved production out of the U.S. and into Asia. The American Apparel and Footwear Association estimates its members outsource the manufacturing of 97 percent of their clothing, more than 75 percent of it to Asia. "Simply put: We are a nation of 330 million importers," the trade group says.

The benefit to the U.S. consumer is clear: Just drive to a nearby mall and pop into H&M,

Uniqlo, Gap or any other fast-fashion label, and check the clothing tags. It's likely that they'll say the garments were made in Cambodia, Laos, Indonesia, China or Bangladesh—all countries competing to make a T-shirt that costs Americans and Europeans just \$5 but takes a heavy toll on the people at its source. Near critically polluted waters like Bangladesh's River Buriganga and Cambodia's Mekong River, life-sustaining farms are dying, potable water has become toxic and locals are now at risk for serious illness, all as a result of industrial-scale clothing manufacturing.

At the core of this environmental and health disaster is the poor state of regulatory institutions throughout much of South and East Asia. Transparency International's annual Corruption Perception Index paints a dispiriting picture: Cambodia and Burma (two of the latest hot spots for textile manufacturing) are tied with Zimbabwe at 156 out of 175 countries ranked, while Laos and Bangladesh are tied at 145. India fares a lot

better at 86, but even there, human rights and environmental preservation are often trumped by the need to provide a business environment that can compete with more corrupt countries.

In a 2013 study, Indian environmental scholar Geetanjay Sahu investigated the country's various state pollution control boards, responsible for regulating the environmental impact of all sorts of industries, including clothing manufacturing. Sahu, drawing on data gathered through Right to Information Act requests (similar to the U.S. Freedom of Information Act), found that the boards are often underfunded, understaffed and run by political appointees with no scientific background.

The pollution control boards for two ocean-facing Indian states frequently cited as development models—Tamil Nadu and Gujarat—are especially corrupt. For example, a 2008 paper by Sahu explains in detail how the Tamil Nadu Pollution Control Board failed to stop the massive spread of pollution from leather tanneries. In February 2015, a wall in a pit holding tannery effluent collapsed, drowning 10 employees in toxic sludge. The plant had been approved by two TNPCB inspectors, who were arrested and jailed for allegedly receiving a bribe of more than \$3,000 to approve the factory's license. The two men

## A WALL IN A PIT HOLDING TANNERY EFFLUENT COLLAPSED, DROWNING 10 EMPLOYEES IN TOXIC SLUDGE.



are facing charges in a local court in Tamil Nadu of three counts of corruption, reckless endangerment, negligence and involuntary manslaughter. A senior official is also being investigated.

Pamela Ellsworth, chairperson of the Fashion Institute of Technology's Global Fashion Management Program and a supply chain expert, says the core problem is that people in the U.S. and Europe expect both a low price and a responsible corporation—and the margins clothing companies require often make it difficult for suppliers to meet corporate vendor codes of conduct and still earn a profit. "Eventually we are going to have to train consumers in the U.S. to pay more for clothing," she says. "It can't be the only commodity that gets cheaper every year."

## BOTTLED WATER UNFIT TO DRINK

**IN THE WAKE OF** the Rana Plaza disaster, India's clothing industry has presented itself as the sustainable, safer alternative to Bangladesh. On September 19, 2013, the Tirupur Exporters Association and the Indian Consulate in New York City co-hosted an event in Manhattan's Garment District, a few blocks from the 34th Street fast-fashion strip. The event was designed to attract orders from American clothing brands, and the message was simple: Fiascos like Rana Plaza won't happen in India.

"The Indian apparel industry is compliance-oriented, and we follow all the rules of the game," Arumugam Sakthivel, president of the association, told the Press Trust of India at the time.

Sinnathamby Prithviraj isn't buying it. The chubby, pompadoured and mustachioed social activist is one of the leading critics of the local clothing industry. He's been fighting for years to publicize—and end—the industry's polluting practices. In 2007, after a decade-long legal battle to shut down dyers who flagrantly violated pollution rules to supply major U.S. brands, Prithviraj and a group of farmers won a decision by the Supreme Court of India to shutter any dyers who hadn't brought their liquid discharge down to zero. But India's legal system moves slowly. The Dyers Association of Tirupur filed appeal after appeal, and the dyers continued to operate in the interim, despite being in



**ALL FALLS DOWN:** Poor working conditions in the South Asian garment industry have led to far too many disasters, such as this factory building collapse near Dhaka, Bangladesh, in 2013.

contempt of the court's decision.

Meanwhile, as orders from major brands like Gap and Wal-Mart increased, so did the release of even more toxic wastewater. Then, in 2011, in what seemed like a triumph for the environmentalists, India's Supreme Court told the utility company in Tamil Nadu to cut power to any dyeing factories in contempt of its order. Most of the factories could not afford to conform to the requirements and ended up shutting down.

But this turned out to be a Pyrrhic victory for Prithviraj and his farmers. Wildcat dyers in outlying districts sprang up, and soon Tirupur's garment pollution problem had spread statewide. In Namakkal, an adjacent district where inspectors are engaged in a game of whack-a-mole to shut down illegal dyers, M. Murugan, the pollution control board's local environmental engineer, admits he's fighting a losing battle. "Many units are small, mobile and can function without electricity," he says. Over the past two years, the Namakkal pollution control board has averaged one or two raids per month. "Ultimately, if we demolish [the dyeing industry] in Namakkal, in some other place it will come again," he says.

In April 2013, Prithviraj told me he wasn't sure what to do next. "Although we won the case, practically, we lost it. We don't have the eyes and human resources to watch what's going on illegally." And, he added, India is "a country where anything can be done illegally."

The next day, Prithviraj sent me out with his driver to see just how lawless the industry can be. For about an hour, my photographer and I snooped around a government-run industrial park home to a number of textile factories. But as I was gathering water samples from the river,



**COLOR OF MONEY:** The rivers around Tirupur are often red or purple with runoff from nearby factories, such as those in the Netaji Apparel Park, above, that are the city's economic engine.

the photographer strayed across a bridge to take pictures of a nearby factory, which he believed was illegally discharging waste into the ditch in front of the building. That's when men began to approach us from several directions. I ran to the car to avoid a confrontation; the photographer seemed less concerned and kept snapping shots.

I yelled for him to speed up and get back in our SUV, but he waved me off, strolling leisurely back to the vehicle. A large crowd gathered. A minute later, we were trapped. One of our pursuers, a brawny man in his early 30s with a shaved head and a clean, striped button-down shirt, blocked our car with his body. An older man joined him and produced a card saying he was from the TN-PCB. Our driver, who had seen many such cards, immediately said it was a counterfeit. But the man with the shaved head took charge, warning us that we needed to "take the proper permissions to be here." He introduced himself as "a local political leader." We later found out that he was Jagadesh Np—one of the owners of Spencer Apparel, a dyeing company that makes clothes for an Indian department store chain, Westside.

When I called Spencer Apparel, a man who identified himself as Rajesh Np, Jagadesh's brother, got on the line. At first, he yelled, questioning angrily why we had been on the grounds



of the government industrial park without special permission. After talking for a few minutes, he changed tack, suddenly inviting us back. "I can give you a detailed explanation about everything and show you everything so that you can write a very good article," he said. And he promised, "In Tirupur, most of us do eco-friendly dyeing. Everything is nonhazardous."

But as Vidiyal Sekar, a former Tamil Nadu state legislative assembly member representing Tirupur, points out, "Eighty percent of dyers do not properly discharge their waste." Sekar did not

**A DANGEROUS HUE:** The health impacts of dyeing factory effluents range from acute symptoms, like joint pain and problems breathing, to higher risk for chronic problems, like ulcers and cancer.

speak directly to the practices at Spencer Apparel. But he added that much of the blame should be placed on TNPCB officials, anyway: "All the pollution department officers do is take a lot of money from these small factories and allow them to operate freely." The TNPCB, Sekar says, is "100 percent corrupt."

Lack of accountability means that it's nearly impossible to figure out which companies were legally operating dyeing plants and which were not. In June 2013, I spoke numerous times on the phone with then-TNPCB Member Secretary S. Balaji, who was steadfastly evasive. In July 2013, H. Malleshappa replaced Balaji. Malleshappa also did not answer any phone messages from *Newsweek*. Late in 2013, a group of environmentalists launched a public interest lawsuit to remove Malleshappa from office, claiming that he was unqualified. Malleshappa eventually left the position soon after an incident in which almost 1,000 illegal bottled water plants were found in his district. Much of the water was unsafe for human consumption. Despite the scandal, Malleshappa remains in a position of power: He is now head of the state's Department of the Environment. His replacement at the TNPCB, K. Karthikeyan, didn't last long either. He was forced out when a local crusading journalist revealed that Karthikeyan had been under investigation for corruption when he was appointed.

Meanwhile, according to the most recent information available on the TNPCB website, Spencer Apparel does not have permission to run a dyeing unit. Neither do many other companies operating in Tamil Nadu. Raagam Exports, for example, has for a long time manufactured clothing for the Spanish streetwear label Desigual and other European brands. After being officially told to stop operations in 2011, Raagam, along with 12 other large Tamil Nadu dyers, appealed to India's National Green Tribunal, the country's highest environmental court, claiming they'd received permission from the Tirupur District Environmental Engineer to resume operations. But the court found that only the TNPCB's head office in Chennai could grant them permission to reopen—and that they still hadn't achieved the zero-liquid discharge required for that consent. In October 2011, the court dismissed Raagam's case.

Borja Castaneda, Desigual's marketing director, says the company has been working with Raagam since 2012. "They have the temporary license to run the dyeing unit," Castaneda wrote in an email to *Newsweek*. "This license has been annually renewed (including the one for 2015) as they are still pending to receive the final one." However, Desigual was unable to provide documentation of the licensing. It was also unable to send over documentation of the audits it claims to undertake regularly. "Unfortunately, these are confidential," said Castaneda.

Raagam Exports was also unwilling to provide proof of its license to operate; its website has a "Compliance" section, but does not include any TNPCB licensing. And the TNPCB website provides nothing that can help to ascertain whether Raagam is currently licensed. Meanwhile, the company continues to send clothes to international brands—Desigual, for example,



received its most recent shipment—almost 260 pounds of multihued viscose dresses—from Raagam in July 2015.

## THE GAP GAP

P.N. SHAMUHASUNDAR runs Mastro Colours, a small hosiery dyer on Tirupur's outskirts. The state government gave him and about 20 other dyers a \$4 million, no-interest loan to modernize their shared effluent treatment plant. Mastro is now certified as having “zero liquid discharge,” but the extra cost of treating and evaporating that liquid waste (instead of just dumping it into the river) means it can’t compete with polluting dyers.

Prithviraj believes American consumers are complicit here. “We feel that selling a T-shirt for \$10 is a sin,” he says. “Is it fair Wal-Mart makes \$8 off a T-shirt and gives nothing to the labor, nothing to the environment?”

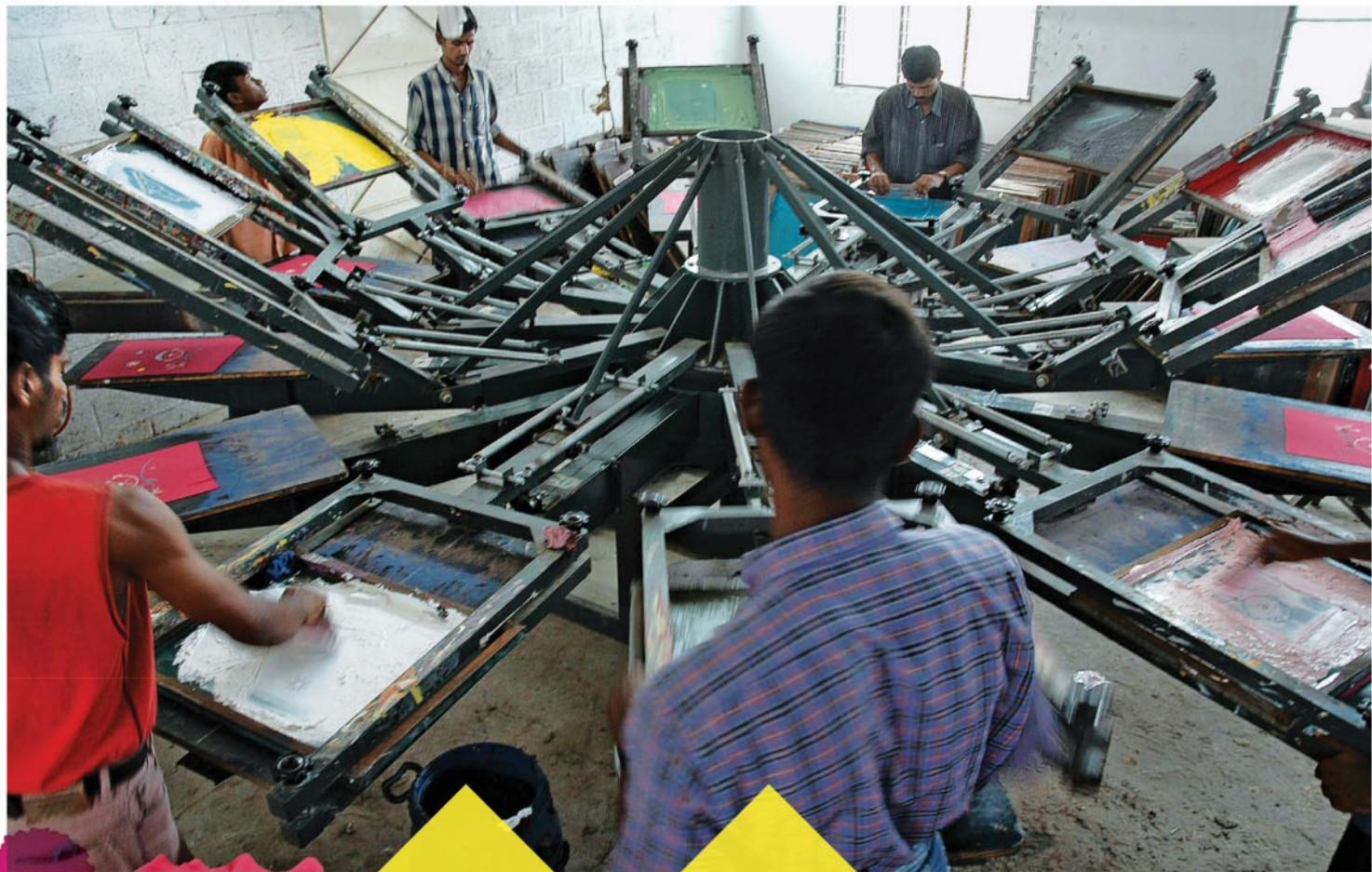
Shipping records provided by Datamyne, which tracks import-export transactions in the Americas, show that between 2007 and 2011, Wal-Mart’s orders increased from Tirupur clothing companies who dyed garments in defiance of the court-ordered shutdown. Take Balu Exports, for example. On its website, the company describes itself as a “vertical set-up under one roof.” Two of its divisions, Balu Process and Balu Exports Dyeing, are members of the Dyers Association of Tirupur. And since 2007, the association has operated in contempt of India’s Supreme Court order to reach zero discharge.

Repeated inquiries to Wal-Mart over the years about its

INDIA IS A COUNTRY  
“WHERE ANYTHING CAN  
BE DONE ILLEGALLY.”

reliance on toxic dyeing companies have been unanswered. In 2015, after receiving detailed shipping records and documentation highlighting the illegal operating status of Balu and other companies from which Wal-Mart sources, Juan Andres Larenas Diaz, director of communications for international corporate affairs, sent a written statement to *Newsweek*: “Our expectation and a contractual requirement of doing business with us is that our suppliers and their subcontractors are in compliance with the law. Our relationship with garment suppliers in Tirupur has always been based on their ability to meet Wal-Mart’s supplier standards and code of conduct.” But Diaz would not address specific allegations.

Prithviraj says he’s been similarly frustrated in attempts to engage Wal-Mart. Talking to Wal-Mart is like “banging your head against a wall,” he says. Instead, he suggested, we should try asking some “big brands”—like Gap, J.C. Penney, Tommy Hilfiger—about their record in Tirupur.



## AS ORDERS TO MAJOR BRANDS LIKE GAP AND WAL-MART INCREASED, SO DID THE RELEASE OF EVEN MORE TOXIC WASTEWATER.

Gap Inc. has long been on the radar of environmental activists. Every year, Greenpeace's garment monitoring unit—called the Detox Catwalk—places major clothing companies in three categories: winners, greenwashers and losers. Gap Inc. is one of the most well-known "losers," based on the company's refusal to disclose hazardous chemicals and unwillingness to commit to stop using them.

Over the past 15 years, Gap Inc. has increasingly outsourced its manufacturing. The company says it has a field team of 40 sustainability experts around the world who make both announced and unannounced visits to nearly all of the factories where its clothing is made. However, it also has come to rely on inspection from third-party firms to ensure its indirect suppliers—such as mills and dyers—are adhering to the

company's vendor code of conduct. In its 2011-2012 Social and Environmental Responsibility Report (the most recent available), Gap admits that it does not have direct control over its supply chain, and things appear to be getting worse. In 2005, 10 to 24.99 percent of its factories in South Asia had violations in their Vendor Code of Conduct-mandated environmental management systems; by 2012, that rose to over 50 percent.

"If over 50 percent of their suppliers are not in compliance, then environmental issues are not a factor in the Gap's supplier selection process," says Heather White, a supply-chain expert and fellow at Harvard University's Edmond J. Safra Center for Ethics. White adds that in many cases, factories end up paying auditors for an inspection report, and in those cases "the quality of the findings suffers." That's because auditors are more likely to keep their jobs if the factories pass inspections. Bribery is common, White says—though she was not able to speak directly to activities within Gap's supply chain.

The issue, ultimately, is that the compliance measures taken by retailers like Gap, Desigual and the dozens of other firms sourcing garments in Tirupur don't account for the complexity of modern clothing-supply chains. Fabric is frequently taken from a mill, dyed at a second facility (owned by the same parent company) and then sewn into finished garments at a third factory (ditto). A corporate auditor, examining the factory and the final product, would find it difficult to determine where the cloth has been dyed. Even visiting a dyeing facility isn't enough; it's easy for a given dyeing facility to subcontract some portion

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**ALL-IN-ONE:** Large clothing brands outsource most of their production to places like Tirupur, where garments are spun, dyed and finished. Here, workers screenprint images onto shirts.

of its dyeing orders to smaller, unauthorized units. And it's even unlikely that an inspector is present when effluent is treated—or released directly into the Noyyal, or dumped in a local field in the middle of the night. Auditing and even TNPCB approval, says Prithviraj, provide little more than a veneer of plausible deniability. "It's a very sophisticated system of lying," he says.

A representative for J.C. Penney, for example, told *Newsweek* that "to the best of our knowledge it does not appear that J.C. Penney has any dyeing business in that area," despite records showing that the company has been taking shipments for years from numerous vertically integrated manufacturers in the Tirupur area, including Eastman Exports. Eastman was operating in contempt of India's Supreme Court 2007 demand that it reach zero effluent discharge during the time it shipped to J.C. Penney. But since the American giant was able to buy from its "finishing" arms, it could feasibly deny knowledge of the illegal dyeing operations involved. Eastman did not respond to requests for comment.

According to Gap Inc., the situation in South India has improved dramatically in recent years. Spokeswoman Laura Wilkinson told *Newsweek* that all the company's third-party auditors are paid for by corporate, and as of June 30, 2015, approximately 90 percent of the company's approved facilities in South Asia have an environmental management system. "We recognize there is a still long way to go," says Wilkinson, "and it will require sustained, and collective, effort to have the most lasting impact."

Many of the other companies that rely on factories in South and East Asia offer similar promises. "Since we are operating in a water-intense industry, we have worked actively to reduce negative water impacts in different parts of the value chain for more than 10 years," says Ulrika Isaksson, an H&M spokeswoman. "Our goal is to become the fashion industry's leading water steward." (H&M is one of Greenpeace's "winners"; it also publishes a supplier list, which includes both primary manufacturers and secondary suppliers like dyers.) Others, including Uniqlo and Tommy Hilfiger, did not respond to multiple requests for comment.

Gap, for its part, has made a commitment to achieve zero liquid discharge in all its supplier factories by 2020. But even if it makes good on the promise, for many farmers in and around Tirupur, it's likely to be too late.

## ROTTEN COCONUTS

**WHEN I RETURNED** to Tirupur in January 2015, the Orathupayam Dam was still filled with green, foamy water. The few locals who have remained in the area struggle to survive.

Karuppaiah Subramanyam has lived and farmed near the dam for many years. From his house, I could see some scrub grass and a smattering of coconut trees, but when I looked a little more closely, the damage became clear: The coconuts—his only crop—were undersized, and many came off the tree already rotten. Subramanyam's 7-acre farm, which was in his family for several gen-

erations, remains the same size it's always been, but it has now become essentially worthless. When Tirupur's clothing industry began producing more clothes and even more toxic runoff, he lost about half his crop, because his primary water source became unusable. "We can only do rain-fed agriculture now," he explains. Before 1995, he could grow eggplant, green chilies, tomatoes, rice, turmeric and tobacco. Now he has to buy all that on the market, with the meager funds he gets from his remaining, undernourished coconuts.

Asked whether he ever received compensation for his losses, he simply shakes his head. There were some court cases, but only the largest landholders with the best legal representation were compensated. Smaller farmers, like Subramanyam, got nothing. Prithviraj led 4,000 of these excluded farmers in an appeal to the Madras High Court, which ultimately decided they should all be remunerated by the dyers association for land that was made barren by the release of toxic textile runoff. Still, that's only a fraction of the nearly 30,000 farmers Prithviraj



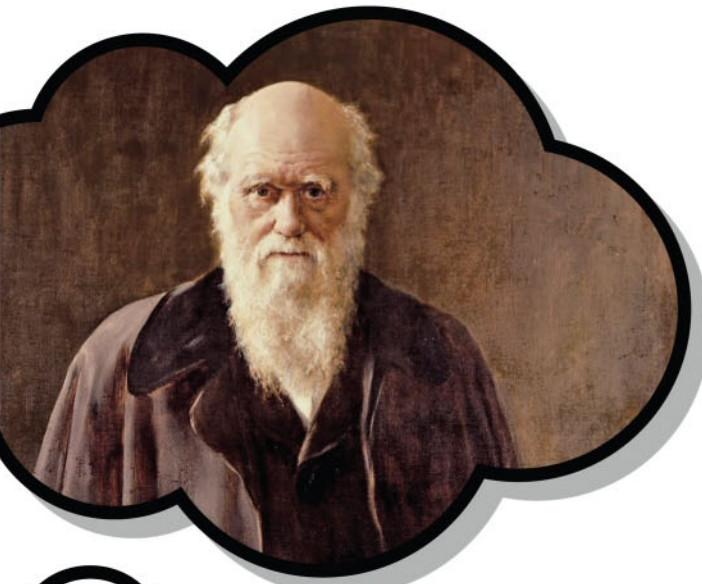
estimates lost their livelihood.

Meanwhile, illegal dyeing units continue to surface regularly. "Some of the new dyeing factories are coming up in other river basins and even in the coastal areas," says Prithviraj. He mentions Cuddalore, an ancient seaport town about 200 miles east, where chemical pollution in some areas has already raised the risk that residents will contract cancer in their lifetimes at least 2,000 times that of the average person.

Even if all the polluting ceased immediately, the damage is already done; it might be impossible to clean and regenerate the Noyyal River and the soil along its basin, says Prithviraj. "We'd have to turn back the clock 20 years." ■

Additional reporting by Aletta Andre and Anil Varghese

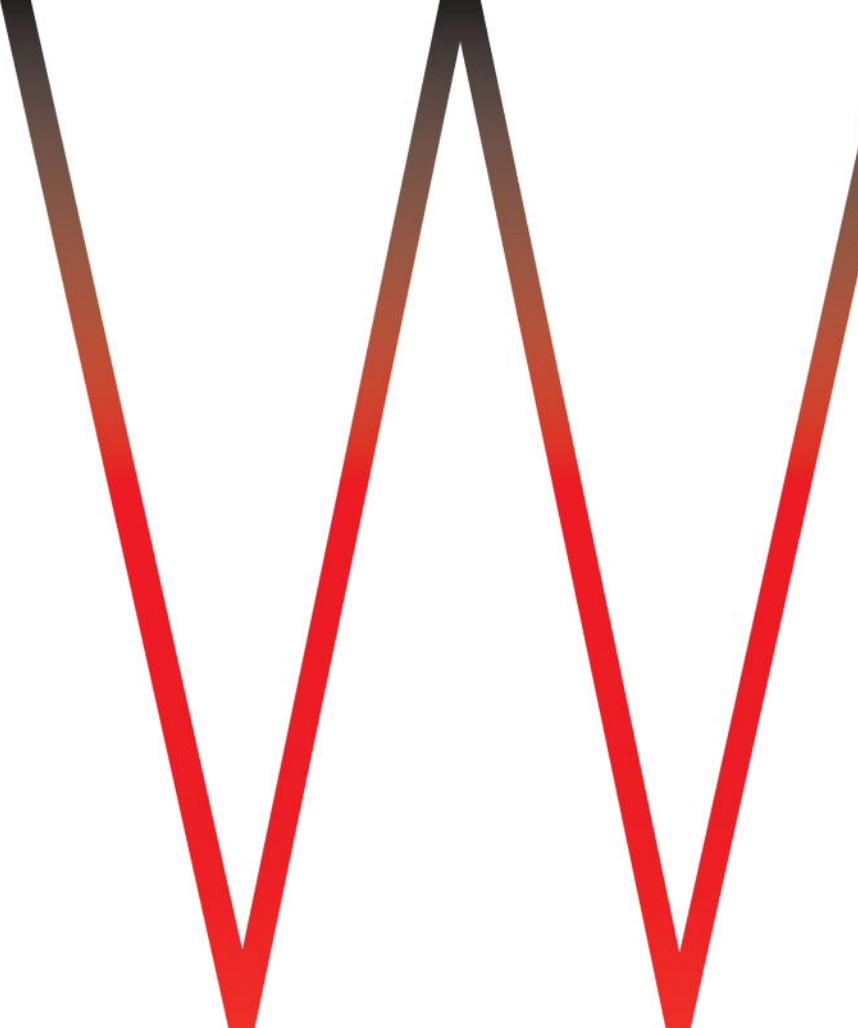




# SURVIVAL OF THE DIMMEST

MANY OF THE BIGGEST CHALLENGES IN THE MODERN WORLD INVOLVE **SCIENCE**, SO DOESN'T IT MAKE SENSE TO HEAR WHAT THE PRESIDENTIAL CANDIDATES THINK... AND KNOW?

BY NINA BURLEIGH



**WHEN CHARLES DARWIN** set sail from Plymouth, England, on the *HMS Beagle* in 1831, the British biologist fell seasick almost immediately, and he remained nauseated for most of the next five years on that ship. Yet the journey, however arduous for Darwin, paid off for the rest of us in one of the greatest scientific theories of all time. After studying the South American coast for several years, Darwin made his way to the Galapagos Islands, where he grew curious about the finches and their various-sized beaks. How, he wondered, had these birds on a small archipelago hundreds of miles from the mainland come to differ so greatly from others of the same species? "We seem to be brought somewhat near to that great fact—that mystery of mysteries—the appearance of new beings on this earth," he wrote in his journal. He solved the mystery of mysteries with his breakthrough theory. Today, evolution is settled science.

Fast-forward 176 years, a British-born American author and screenwriter named Matthew Chapman was lolling on a couch in his Manhattan apartment, watching a presidential primary debate. It was 2007, and while Chapman wasn't exactly nauseated by what he was hearing, he was noting with dismay (not for the first time) that the candidates never discussed science—even though any future president's most vexing challenges, from Iran's nukes to

global warming, Internet security and women's reproductive politics, are impossible to discuss without dealing with physics, math and biology.

That's when he had his own breakthrough.

Chapman's scientific bona fides were mostly genetic. He happens to be the great-great-grandson of Charles Darwin, and he had recently completed a memoir about growing up Darwin—being the literary black sheep at the end of a long line of famed scientists. As part of his research for that book, he studied the Scopes trial, in which politician William Jennings Bryan faced off against lawyer Clarence Darrow on the teaching of evolution in public school, so the politics of science in American life were more on his mind than usual. "Everything in my family was assessed through some form of the scientific method," says Chapman, who moved from London to Hollywood in the 1980s to work as a director and screenwriter, and now lives in New York. "It was just really peculiar to see people we were going to give trust to not addressing either the scientific issues nor the method by which people assess truth in the best possible way."

Chapman's subsequent voyage into American politics has been not unlike his ancestor's on the *Beagle*—queasy and slow to produce results. His grand idea: Every four years, American presidential candidates should have one debate solely about science. He enlisted fellow author and screenwriter Shawn Otto, author of a book on the history of science in American politics, and together they founded Science Debate. They rounded up 28 Nobel laureates, 108 college and university presidents, the National Academy of Sciences and a long list of artists, writers and industry leaders, and commissioned research and polling to examine how presidential candidates talk about science. They also invited candidates to a debate in 2008 and got ignored, twice.

This election cycle, Chapman and his advisory board—which includes heavyweights such as Norm Augustine, a past CEO of Lockheed, and former Minnesota Governor Arne Carlson—believe they have a better chance. They are working with the National Geographic Channel and Arizona State University to again attempt to stage and broadcast a presidential science debate. Darwin's descendant says he's not discouraged by previous failures to get the likes of Donald Trump and Bernie Sanders to explain how they'd incorporate science into White House decision-making. "I believe that there will come a time when it will seem as odd for a candidate not to attend a debate on science as it would now seem odd for one not to attend a debate on foreign or domestic policy or the economy," he says.

But foreign policy debaters agree that a place called Iran exists, and domestic policy opponents don't differ on how many Americans receive

Medicare. A science debate, however, would begin and end with a profound disagreement over facts that a vast majority of scientists say are irrefutable.

### A Snowball in Senate Hell

**NONE OF THE MAJOR CANDIDATES** has yet agreed to participate in Chapman's debate. But none can deny that science is at the core of many of today's most contentious battles. Take the Iran nuclear deal. The international negotiating teams in Vienna this summer included not only diplomats but also physicists, without whose expertise the participants would have never gotten past chatting about where to buy Sacher torte. Everyone in the room, from U.S. Secretary of State John Kerry on down, had to be fluent in the arcana of uranium processing, understand the difference between an IR-1 and an IR-2m centrifuge, decode what it means to limit a reactor to "not exceed 20 MWth" and understand that "bake times" didn't refer to Betty Crocker's test kitchen.

The anointed MVP of the American team was not Kerry, but Energy Secretary Ernest Moniz, an MIT physicist instantly recognizable as a scientist by his slightly-tamer-than-Albert-Einstein's gray hair. Moniz is credited with having bridged one of the big divides by allowing the Iranians to keep a cherished, fortified nuclear research bunker called Fordo after persuading them to devote its centrifuges to medical isotopes rather than potential bomb fuel.

When Moniz returned from Vienna, he went on a congressional blitz, explaining the deal's intricacies to Republican hawks who want to kill it. The GOP has presented some valid scientific evidence to support its objections, but the spectacle has also led to

some awkward moments. *New York Times* reporter Jonathan Weisman, covering one Senate hearing, drily tweeted: "Now Sen. Ron Johnson is lecturing MIT physicist Ernest Moniz on electro-magnetic pulse weapons."

A bitter divide rooted in biology has provoked one of the nation's most intractable political conflicts: legal abortion. Last month's release of undercover videos of Planned Parenthood leaders discussing fetal tissue harvesting unleashed another round of political attacks on the organization. Planned



**JUST KIDDING** Much of the public debate over the safety of GMOs is based on emotions, not facts, and ignores the findings of scientists.

Planned Parenthood President Cecile Richards chided the doctor in question for her casual talk about crushing fetal skulls, but her organization maintains that gruesome discussions are typical medical talk. As congressional committees gear up to hold hearings on whether to defund Planned Parenthood's contraception programs in retaliation for the revelations,

**"[Sen.] Ron Johnson is lecturing MIT physicist Ernest Moniz on electro-magnetic pulse weapons."**



**HOT TOPIC:** The global warming debate has been muddled by PR campaigns sowing doubt about something that is accepted scientific fact, much like the efforts to deny the link between cancer and smoking.

politicians plan to rely on scientists when considering standard operating procedure for organ donations from cadavers and fetuses, as well as the larger questions of fetal pain and when human life begins. Or not.

By far, the most contentious science issue of our time is climate change, pitting the global science establishment against the global—but far better-financed—energy industry. Almost every week, scientists reveal direr consequences of humanity's carbon emissions, including July's announcement from former NASA planetary scientist James Hansen

and other leaders in the field that sea levels could rise 10 feet in 50 years, far exceeding previous estimates. Obama managed to get re-elected in 2012 without much talk of global warming. Safely into his second term, he now deems it of paramount concern, and in August unveiled an ambitious Clean Power Plan to reduce emissions by 32 percent of 2005 levels by 2030. "I'm convinced no challenge provides a greater threat to the future of the planet," Obama said. "There is such a thing as being too late."

On Capitol Hill, Republican leaders are acting now—by hauling in NASA scientists to explain why they are wasting taxpayer money on tracking rising Earth temperatures instead of flying to Mars (their observations found 2014 to be the hottest year on record). The chairman of the Senate Environment and Public Works Committee, James Inhofe, tossed a snowball on the Senate floor to point out that the planet probably isn't warming. Senator Ted Cruz, who chairs the Subcommittee on Space, Science and Competitiveness, has pushed NASA to stop monitoring earthly temps and prefers to talk about science fiction, most recently assuring *The New York Times* that *Star Trek*'s Captain Kirk was a Republican.

## The Unscientific Method

**WITH A FEW EXCEPTIONS**—Al Gore, Newt Gingrich—modern American presidential candidates rarely discuss science. The Founding Fathers, though, were devoted to the scientific method, and science was at the heart of the national idea. On July 4, 1776, as the Declaration of Independence was being adopted, Thomas Jefferson was recording local temperatures as part of a research project. Stories of Ben Franklin's experiments with lightning and the kite are well-known. The founder of the Smithsonian, America's greatest museum and first scientific institution, was a British scientist. Like many others in his field, he believed the new democracy across the Atlantic would produce great scientific advances.

America did become the global leader in science and technology. But 239 years after the founding, many Americans, and many of our elected leaders, suspect scientists and distrust their conclusions. We all know the Professor on *Gilligan's Island* or the grad students on CBS's *Big Bang Theory*, but few can call to mind a living American scientist. The one most Americans can name, Einstein, feared this obliviousness so much that in 1946, less than a year after the U.S. dropped an atomic bomb on Hiroshima, he tried to raise money to fund a national campaign to push for more public awareness of the science behind political decision-making, especially with respect to war and weapons. "The unleashed power of the atom has changed everything save our modes of thinking and we thus drift toward unparalleled catastrophe,"

## "Only in superstition is there hope."

Einstein wrote. He didn't get his campaign.

There are many reasons Americans now distrust science, and the most valid is that all scientific research has an element of uncertainty. Then there are other causes: an anti-science strain among religious fundamentalists, as well as contrarian pseudoscience, financed by vested interests, like those now aimed at climate change and previously the safety of cigarettes.

Partisan sentiment toward science has shifted 180 degrees since the Cold War, when Republicans were the pro-science party and liberal Democrats distrusted its relationship to the military. Democrats used to be the party of astrology and the New Age. Certain that science's mushroom cloud doomed humanity, novelist Kurt Vonnegut wrote, "Only in superstition is there hope." Now the pendulum has swung, and Republicans are more often distrustful of science. Of Democrats and Democratic-leaning independents, 83 percent think government investment in basic scientific research pays off in the long run, Pew researchers found. A smaller majority—62 percent—of Republicans agree, while 33 percent say such investments are pointless.

The party shift dates to the early '90s, as more and more severe climate change predictions threatened the energy sector—a major GOP funding base. Today, 87 percent of scientists believe human activity is causing global warming, according to Pew, and 71 percent of Democrats say the Earth is warming because of human activity, while only 27 percent of Republicans agree with that statement. And just 43 percent of Republicans accept the theory of evolution, compared with 67 percent of Democrats.

To be fair, Democrats are not uniformly pro-science on many issues, including global warming. They can be found protecting coal interests and tend to be against nuclear power, even though it's a source

of carbon-free energy that scientists tend to support. And like Republicans, their ranks include anti-vaxxers and a large cohort who think genetically modified organisms (GMOs) foods are unsafe—opinions at odds with most peer-reviewed science.

Modern science is based on a mode of inquiry developed by 17th century European thinkers that's sometimes called the scientific method, which Darwin's descendant refers to reverentially above. It entails observing the natural world, questioning



**IT'S AN EVOLUTIONARY PROCESS:** Chapman, who has been pushing for a science debate by presidential candidates since 2008, believes he has a real shot at getting one on TV this election cycle.

what one sees and then conducting experiments to gather measurable, empirical evidence to answer those queries.

For laypeople, understanding any scientific issue—climate change, vaccinations, GMOs, cyber-hacking and digital surveillance, to name a few—requires a rudimentary understanding of the scientific method and a level of trust that its results, when confirmed, are right.

The Pew survey found that on many issues,

Americans don't have that trust. Americans respect but don't necessarily *believe* scientists, and that is true across the political spectrum. That distrust is at the heart of the call for a science debate. "Leading the national discussion requires some basic knowledge of what the important issues are, what is known and not known, and what new efforts need to be commenced," says physicist Lawrence Krauss. "Scientific data is not Democratic or Republican."

### We Need to Talk About Sandy

**IN RECENT PRESIDENTIAL ELECTIONS**, both parties have avoided speaking about climate change, and so have journalists on the campaign trail. The League of Conservation Voters ran the numbers and found that by January 25, 2008, journalists had conducted 171 interviews with the presidential candidates, and of the 2,975 questions asked, only six mentioned the words *global warming* or *climate change*, while three mentioned *UFOs*. In 2012, after a year of record-breaking heat, drought and Arctic ice melt, none of the moderators in the three presidential general-election debates asked about climate change, nor

the climate science campaign Forecast the Facts.

Most leading Republican candidates are on record refuting mainstream climate science. Cruz said in the last 15 years "there has been no recorded warming," Mike Huckabee has called global warming a hoax, and Jeb Bush and Rick Santorum have said the planet's getting hotter but doubt that human-produced greenhouse gases are contributing mightily toward it. Rand Paul said he believes the Earth goes through cycles of warming and cooling and he doesn't know why. Scott Walker has been a keynote speaker at the Heartland Institute, one of the chief anti-climate change organizations. After Sandy swamped his state in 2012, New Jersey Governor Chris Christie declined to blame Sandy on global warming, but he has recently said "global warming is real." Senator Lindsey Graham accepts climate scientists' conclusions as fact and has said he wants to combat the issue in a business-friendly way. (This after Graham, John McCain and Hillary Clinton traveled to Alaska to see the effects of climate change.)

On the Democratic side, Clinton released a YouTube video last month talking about her responsibility for the planet as a grandmother and humorously

## Most of the leading Republican candidates refute mainstream climate science. Mike Huckabee calls global warming a hoax.

did the candidates broach the topic. The closest the candidates came to a science debate arrived during their nominating conventions. Standing before fellow Republicans in Tampa, Florida, Mitt Romney joked about a Moses-like Obama promising to "slow the rise of the oceans" and "heal the planet." At the Democratic National Convention in Charlotte, North Carolina, Obama stated, "Climate change is not a hoax. More droughts and floods and wildfires are not a joke. They are a threat to our children's future, and in this election you can do something about it."

And that was it, until Superstorm Sandy's inundation of lower Manhattan and New Jersey during the final hours of the campaign forced candidates to cancel scheduled activities and journalists to discuss extreme weather.

The current presidential cycle promises to be different. Whether or not candidates can be herded into a public science debate, they're already staking out positions. "There's clearly been an uptick in discussion [of climate change] in both of the primary fights over what we saw in 2012," says Brad Johnson, with

depicting her potential Republican opponents as "mad scientists," complete with old-time *Frankenstein* movie effects. But the issue is almost as tricky for her as it is for the GOP. In July, she faced demands in New Hampshire for a "yes or no" answer about banning the extraction of fossil fuels from public grounds. "The answer is no until we get alternatives into place," Clinton hedged. Hecklers, scenting a waffle, started chanting, "Act on climate!"

### 'Doubt Is Our Product'

**HOW WOULD A SCIENCE DEBATE WORK?** The way Chapman and his friends envision it, candidates would not be called upon to don lab coats and perform experiments before an audience of millions, as diverting as that spectacle might be. They want a debate like the domestic and foreign policy debates, in which candidates are not expected to explain the complex economics behind Social Security financing predictions or know the exact population of Tehran, the Iranian capital, but to demonstrate that

they have consulted with experts and formulated ideas and opinions about policies.

"We don't expect the next president to know the seventh digit of power or even be a scientist," says Krauss. "But they need to have some fluency with what the issues are, who to turn to for expertise, and most important, demonstrate a willingness to base public policy, where possible, on empirical

illness and suicide. What can science do to alleviate this problem, and what would you do to help?"

It's simpler to organize any presidential debate before the conventions, after which the bipartisan Presidential Debate Commission takes charge of the 90-minute, commercial-free candidate megamatchups that draw as many as 70 million viewers.

In 2008, Science Debate organized two pre-



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**A SANDY REMINDER** In 2012, Hurricane Sandy ripped up the East Coast of the United States, and forced the presidential candidates to address, briefly, the ramifications of global warming.

evidence rather than ideological prejudice."

Chapman believes it is possible to organize a debate that reveals a candidate's attitude toward science without requiring him or her to dive into eye-glazing technical details. For example, he says, some of the questions would be: "Here is a family that will lose the land they've farmed for generations if the sea rises. Why is this happening, and what will you do about it? Here is a family that lost their child to mental

convention debates in Philadelphia and Corvallis, Oregon to be recorded and provided to PBS affiliates. Both parties ignored calls from the debate organizers, opting to attend debates at religious venues instead.

Obama agreed to answer online science questions in writing, and other candidates followed suit. Their answers to "The 14 Top Science Questions Facing America" received 850 million media impressions, according to Chapman.

None of the campaigns queried by *Newsweek* responded to a question about whether they would participate in a science debate, but former GOP presidential candidate Newt Gingrich offered qualified support. "Republicans should participate in a science debate if they have some assurance that it will be about science rather than political science," he tells *Newsweek*. "If the purpose of the debate is to implement the anti-science views of the current editor of *Science* magazine—who has announced

science to inform their opinions on issues, or whether they are culling scientific information to support their already formed opinions on issues. This is a big difference, and one which should be quite apparent in a debate format," she tells *Newsweek*.

If candidates debate science, McNutt says, the public could assess whether they trust mainstream science or industry-funded research that looks like science, but is actually just public relations.

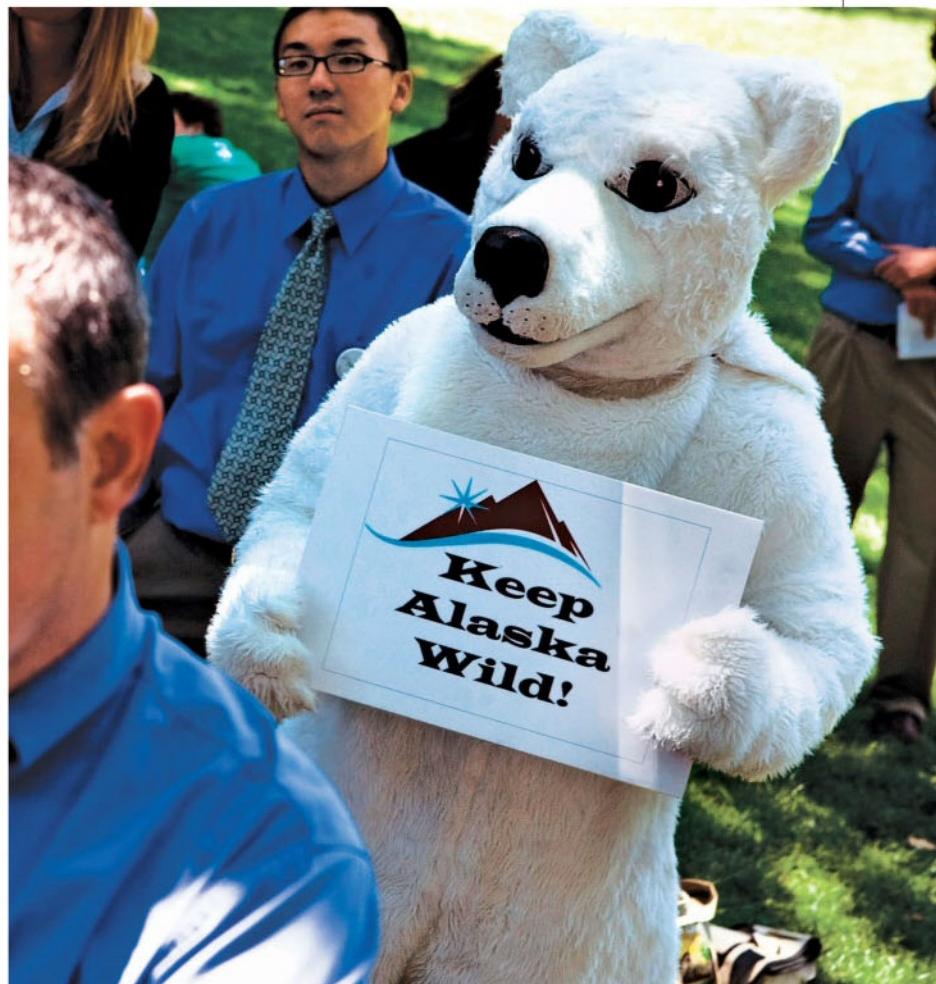
Journalists Naomi Oreskes and Erik Conway, in their book *Merchants of Doubt*, describe how industries and vested individuals have spent billions to fund fake or skewed research that conflicts with mainstream science on certain subjects. The most famous example was the tobacco industry's effort to keep cigarettes from being linked to illness and death. "Doubt is our product," stated an executive of tobacco company Brown & Williamson in a famous 1969 memo, as the industry began to churn out hundreds of pages of lab-style propaganda aimed at countering the now widely accepted fact that cigarettes cause cancer.

Vested interests have funded parallel science to support many public policy positions, from the safety of second-hand smoke, the harmlessness of acid rain, the effectiveness of a "Star Wars" defense shield (Strategic Defense Initiative), the permeability of the ozone layer and DDT revisionism.

The effect of these campaigns on government policies is insidious, and during lean times, when the government has fewer dollars to invest in nonaligned technical advice, they are even more effective. In the early 1990s, House Speaker Gingrich touted himself as an apostle—if not an architect—of best-selling futurist author Alvin Toffler's high-tech "Third Wave" society, a post-industrial Utopia. But during his budget-slashing crusade, he defunded the House Office of Technology Assessment, an act former New Jersey Congressman

Rush Holt, a Democrat and physicist and now CEO of the American Association for the Advancement of Science, compared to a "lobotomy" for Congress, because it left House members ever more reliant on political staff and industry lobbyists for scientific data relevant to policy.

The mother of all dubious science projects, though, is the one now aimed at the climate. It



**POLARIZING VIEWS:** Many of the pressing issues the next president must grapple with involve knotty science, including abortion, the nuclear deal with Iran, climate change, internet security and fracking.

that the debate over climate change is over—no one should participate. That is anti-science propaganda on behalf of an ideology."

Gingrich was referring to *Science* Editor-in-Chief Marcia McNutt, incoming president of the National Academy of Sciences, and a vocal supporter of a presidential science debate. "We need to understand whether the candidates are using

# Just 43 percent of Republicans accept the theory of evolution, compared with 67 percent of Democrats.

began just after the Clinton administration signed the (relatively toothless) Kyoto climate agreement. The American Petroleum Institute funded a Global Climate Science Communications Action Plan, with the stated chief goal of highlighting “uncertainties” in climate science.

Since then, hundreds of projects have been launched, conferences hosted, papers published and fishy expert analyses churned out by free-market, fossil-fuel supporters such as the Heartland Institute, all to mount a campaign against the 87 percent of scientists who believe global warming is caused by human activity.

The point of these well-funded missions is not to change the minds of scientists, but to influence voters. Mainstream scientists whose views are at odds with industry—for example, NASA’s Hansen, who first alerted Congress to global warming, or Penn State climate scientist Michael Mann, who created the “hockey stick” graph showing that the rise of human carbon emissions tracked almost exactly with a global temperature spike—find themselves in the middle of a game of hardball politics, fielding personal hate mail, lawsuits, death threats and curtailed careers. A Climate Science Legal Defense Fund was created in the last few years to aid climate scientists caught in the political crossfire.

The doubt sown by so-called parallel science affects how people view climate change, but arguably also diminishes science generally, so that educated progressives now suspect GMOs are harmful and vaccines must be bad for kids—dismissing mainstream scientific opinion. Ultimately, faux science PR campaigns embolden candidates to deny settled science and engage in ideological decision-making that has, as Republican adviser Karl Rove once put it (approvingly), moved beyond the “reality-based world.”

## Arrogance Kills

“**LOOK, FIRST OF ALL**, the climate is changing,” Bush said this spring at a New Hampshire campaign house party. “I don’t think the science is clear what percentage is man-made and what percentage is natural. And for the people to say the science is decided on, this is just really arrogant, to be honest with you. It’s this intellectual arrogance that now you can’t even have a conversation about it.”

One reason for the impossibility of conversation is the intransigence of both sides, and Darwin’s heir, Matthew Chapman, insists that the public should be able to hear from candidates who accept settled science and those who reject it. “It is not necessary that candidates agree with current scientific orthodoxy, or even with the scientific method,” he says. “What you can’t argue is that the issues are trivial and not worth debating.” Chapman insists it’s possible for a debate to occur between politicians who believe scientists and those who doubt them. “I am absolutely 100 percent sure this will happen,” he says.

Dan Fagin, who won a Pulitzer Prize last year for his book *Toms River: A Story of Science and Salvation*, tracks the public discourse as a professor of science journalism at New York University. He begs to differ. “There will never be a science debate, at least not anytime soon, but that’s not because of the issues are complicated. It’s because the triumph of the hard right is that they convinced too many Republicans that science is just another partisan issue, another opinion. The solution is going to have to come from within the GOP.”

As the GOP shows no signs of grappling with that issue, the endless—nonpresidential—debate grows ever more bitter. Climate scientists say Bush is flat wrong, that the issue is settled: Man is mostly responsible. They scoff at Inhofe and Cruz, labeling them “deniers.” They also admit they have a communications problem. Few have been taught to sell the public on their work, and they survive only by persuading colleagues or government agencies to give them funding.

Traditionally, scientists have had no incentive to talk about their work to inform, let alone inspire, the public. Now, when they do step up, many take the dismissive tone of an educated elite shepherding unschooled civilians who should trust the experts if they know what’s good for them. The Pew survey found that education levels do not always correlate with trust in science, a fact scientists and their supporters might consider before assuming their adversaries are stupid. “Science is not the sole source of wisdom, an oracle,” Fagin says. “It’s the most powerful tool we have for understanding the world, but individual scientists are only human and subject to error. A little more humility would do us all a lot of good.” ■



+

**IDLE AND THRIVE:**  
As the number of  
EVs on the road  
grows to the mil-  
lions, the potential  
to store massive  
amounts of energy  
will become vast.



# NEW WORLD

[TWITTER](#)[SPACE](#)[AUTOMOBILES](#)[HEALTH](#)[ENVIRONMENT](#)[WILDLIFE](#)**GOOD SCIENCE**

## GRID EXPECTATIONS

New technology lets e-vehicle owners sell their unused car battery power to the grid

IT MAY soon pay to drive an electric car. Literally.

As power grids rely increasingly on renewable energy, storing excess power is going to be ever more essential. Solar and wind are intermittent energy sources, often producing a surplus when they're in full swing, and zero when nighttime comes or winds die down. So grid operators need ways to store excess capacity in down times and tap into it when they need it.

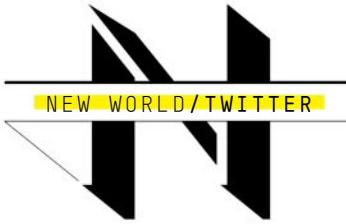
They could build huge warehouses crammed with battery packs for storage, but that would be costly. A much less expensive solution is what's called vehicle-to-grid (V2G) technology: a computerized system that enables owners of electrical vehicles (EVs) to send some of their cars' stored battery power back to an electrical grid—and get paid for it.

One EV battery's capacity is around 10 kilowatt hours of power. So just 30 cars would provide enough power to run around 300 homes. That energy is also very cheap: According to

Willett Kempton, who oversees a University of Delaware research team that has pioneered the V2G process, buying power from EV batteries would cost grid operators a tenth of building battery stations with equal amounts of energy.

Earlier this year, Nissan announced it was working with the Spanish utility company Endesa to roll out a V2G system. Meanwhile, Danish startup Nuvve, which has licensed V2G technology from Kempton's team, is expected to soon begin commercial V2G operations with two European grid operators and two global automakers.

An automated system would take power from EV batteries when it's most needed by the grids and at a good price for buyers and sellers. If owners need to take a long trip and can't risk giving up any battery capacity, they could override the system to temporarily stop a grid feed. Kempton says that owners could even earn more from V2G than what it costs them to keep their batteries charged. "The proposition is pretty compelling." ■



DISRUPTIVE

## TWEET SURRENDER

# The tide is turning against Twitter, which never had a plan or a reason for being

**TWITTER** is running into trouble because it has never been much of a company. It is more like a “thing”—a communications fad that sprung out of a momentary burp in technology. Twitter has more in common with citizens band (CB) radio of the 1970s than with Facebook or Uber.

Most successful tech companies are born from some sort of vision. The founders see a problem that technology can solve, or invent a technology they believe can change the way we do things. Twitter, instead, was more like an accident. Its founders bought a winning lottery ticket and then thought they got rich because they were smart. So it's not surprising that those same leaders don't know what to do today. They just seem to hope that old lottery ticket pays off again.

So, basically, the odds of Twitter turning itself around and getting on the path to greatness seem about equal to the odds that Caitlyn Jenner will go back to being a dude.

By the way, this is coming from a guy who likes Twitter. I'm not even among the 1 billion people who, one Twitter investor calculated, have tried Twitter and abandoned it like ill-fitting underwear.

Twitter was born into a broken home. Jack Dorsey created Twitter while he was working inside a struggling podcasting company called Odeo, run by Evan Williams. As Dorsey tells it, the inspiration for Twitter was, in fact, CB and dispatch radio, where people just got on and said what they were doing at the moment. Dorsey thought he could adapt that idea using the SMS

function on mobile phones, so people could have a new way to spurt out to nobody in particular whatever they were doing. This didn't solve anybody's problem. It was a toy.

(For those who don't know why Twitter is 140 characters: SMS used to be limited to 160 characters. Twitter saved 20 characters for the user name. The other 140 were for the message.)

Odeo launched Twitter in July 2006, though “launch” is an overstatement. It was just put out there, and techies started using it. July 2006 turned out to be a very auspicious pocket in time. Smartphones with keypads were just catching on, but there were almost no mobile apps. In that vacuum, SMS turned into a killer app, and Twitter ran on SMS. Facebook, founded in 2004, was still a PC-and-browser product, not mobile at all. Apple's iPhone would be introduced a year later, in June 2007, and would have few apps at first. This combination teed up Twitter's opportunity.

By mid-2007, Twitter was spreading fast. Williams spun it out of Odeo. He, Dorsey and Biz Stone claim founder status, but none of them had a grip on what to do with their baby. Dorsey, the original CEO, couldn't figure it out, so Williams booted him and became CEO. In 2008, I interviewed Williams onstage at a Silicon Valley event, and he clearly didn't have a plan either. “I'm certainly not driving the train,” he told me. “I'm trying to see, like, Where are those tracks going?”

I asked about his vision for Twitter. “I have ideas, but I'm not necessarily good at predicting the future. I have a sense of what will take off

BY  
**KEVIN MANEY**  
 @kmaney

**140-CHARACTER FLAW:** Twitter is a novelty that never figured out how to be a necessity, so users, investors and employees are bailing.

and why, and it's mostly gut, so I'm not good at articulating it necessarily." He added that he was getting a sense of what Twitter might become "through osmosis."

Fast-forward to July of this year, and Williams, onstage at *Fortune*'s Brainstorm conference, offered this: "From early on, we didn't know what it was: a social network; microblogging was a thing a lot of people called it."

Translation: Nobody at Twitter had a clue. Williams left as CEO in 2010, replaced by Dick Costolo, who came from Google and had no ties to Twitter's founding ideas and lacked the political capital inside or outside the company to develop and impose a new vision, if he ever had one.

In the meantime, Twitter's window is shutting. Communications apps from Instagram to Snapchat have flooded smartphones. Facebook blew into mobile like a hurricane hitting Houston, crashing into the notifications party Twitter once tried to own. Since Twitter never knew what it was, it apparently can't figure out what it

can be in this new environment. So it has mostly stalled like a rusting Chevy Nova in a carport.

Dorsey has returned as interim CEO. He got on the July call to analysts when Twitter announced results that sent its stock reeling. "We need to do three things," Dorsey said. "One, we need to ensure a more disciplined execution. Two, we need to simplify our services to deliver Twitter's value faster. And three, we need to better communicate our value." See anything inspiring there? Any inkling of vision? Strategy? Nope! All Dorsey said was that Twitter needs to do what it does better.

In that quarterly report, Twitter said its monthly active users grew just 0.7 percent to 316 million, a sign of alarmingly poor growth. The *Financial Times* reported that 450 employees, 12 percent of the company, have left in the past year. Even Anthony Noto, Twitter's chief financial officer, told analysts, "The No. 1 reason users don't use Twitter is because they don't understand why to use Twitter." Which circles back to Twitter's original sin: It never solved a problem.

Tellingly, Twitter's founders have all gone on to start other reasonably successful companies that are nothing remotely like Twitter, which suggests that one thing they learned from Twitter was not to start a Twitter.

Back in the mid-1970s, CB nailed a pocket in time too, tapping a confluence of the gas crisis, cheap



## TWITTER DIDN'T SOLVE ANYBODY'S PROBLEM. IT WAS A TOY.

electronics from Japan and a popular fascination with truckers. Even Betty Ford had a handle: First Mama. For most people, who weren't truckers, CB didn't solve a problem. Within a decade, its appeal played out. Then we got cellphones, and CB was pretty much done.

Seems like that's the road Twitter is motoring down. 10-4, good buddy. Looks like a rough ride ahead. ■



NEW WORLD / WILDLIFE

## FISH IS MURDER?

# The fishing boom is having a devastating effect on oceans

**SYLVIA EARLE** fell in love with the ocean as a teenager in the 1950s. She marveled at the wealth of aquatic life in the Gulf of Mexico, near her family's home in Clearwater, Florida. She was entranced by the inquisitive grouper fish, playful shrimp and even the vastly underrated plankton, which produce most of the Earth's oxygen.

Earle grew up to have a remarkable career as an oceanographer. In 1970, she made headlines when she led the first all-female team of aquanauts on a two-week expedition, living underwater in a module off the Virgin Islands. She became the first female chief scientist of the National Oceanic and Atmospheric Administration; set diving records and spent more than 7,000 hours underwater; helped start a couple of companies that make submersibles; and she is now a National Geographic explorer-in-residence. But over the past 40 years, she's also had to watch the ocean and the life in it suffer dramatically.

Since 1950, Earle says, "we've seen greater changes in the ocean than in all preceding human history." One 2003 study found that the amount of large oceanic fish had declined 90 percent in the preceding half-century. And it's not getting any better; a 2014 United Nations Food and Agriculture Organization report estimates that 90 percent of the world's fisheries are overfished or depleted.

Since Earle spent that time in the coral in the Virgin Islands, Caribbean reefs have declined by half, driven in large part by the dying out of sea urchins and parrot fish, which eat algae that,

when allowed to grow unchecked, block coral's ability to photosynthesize. Both sea urchins and parrot fish have been decimated by overfishing.

In large part, all this is because fish are an increasingly big business. Almost nobody ate tuna in the 1950s, for example; it was considered a trash fish, Earle said at the 2015 Curiosity Retreat. After eating raw fish and sushi became popular in Japan in the 1960s, in part as a result of better refrigeration, the practice spread to the U.S. and other parts of the world in the '70s and '80s; American sushi restaurants now bring in \$2 billion a year. A large percentage of the fish eaten in the U.S. today was not used as a food source even 50 years ago.

Earle likens seafood to "aquatic bushmeat." Bushmeat typically refers to the consumption of a range of land-dwelling wildlife—from lizards to bats to monkeys—that is threatening biodiversity in Africa and Southeast Asia. Earle says we need to start thinking about seafood in a similar manner: "It's crazy how we lump these wondrously diverse animals into one little four-letter term: *fish*." Earle points out that many people eat fish without thinking about what species they're ingesting, where it came from or how it was harvested—and that many of these creatures are wild animals, violently plucked out of their watery homes and plopped onto our plates. She insists it's no different from bushmeat in the way it harms the ecosystem.

Earle says that if people are to eat fish, they should "do it with great respect: Find out where the fish are from.... But most important, think of



BY  
**DOUGLAS MAIN**  
 @Douglas\_Main



**EMPTY TINS:**  
**Even the sardine,**  
**which travels in**  
**schools of mil-**  
**lions, isn't immune**  
**to overfishing.**  
**Federal regulators**  
**in the U.S. had to**  
**close commercial**  
**sardine fishing in**  
**the Pacific for the**  
**2015-2016 season.**

these fish as wild creatures. You might be repelled if you saw eagle, owl, snow leopard or rhino on the menu."

Not everyone agrees. Brett Tolley, a community organizer with the Northwest Atlantic Marine Alliance, a nonprofit organization working with fishing communities on market and policy issues, says that the idea of fish being "aquatic bushmeat" is oversimplified. Fish are an altogether different beast than, say, hippos or gorillas, and there are many fishermen who follow sustainable fishing practices. Ed Barrett, a fisherman from Marshfield, Massachusetts, says it's "environmental propaganda." And even many environmental groups see nothing wrong with fishing that's done in a responsible manner.

But it's incredibly difficult to track down the provenance of a piece of fish. The only relevant law that governs seafood labeling is a U.S. Department of Agriculture mandate that seafood be labeled with its "country of origin," says Tolley. This law is ineffective, though, because processed seafood—a category that includes more than 50 percent of all fish sold in the U.S.—is exempt, Food & Water Watch reports. The law also requires that companies state only the

"IT'S CRAZY HOW WE LUMP THESE WONDROUSLY DIVERSE ANIMALS INTO ONE LITTLE FOUR-LETTER TERM: *FISH*."

last place the fish passed through. So fish caught in the U.S. but exported for processing to China, and then for further processing in Indonesia—a common occurrence—would be labeled as from Indonesia, if it's labeled at all, says Carl Safina, a marine ecologist and environmental writer.

"Fish is unlike any other kind of meat: Not only is a lot of it wild, but it's often misrepresented," says Safina. That's why he started a well-regarded seafood guide that provides detailed information about each fish species, and gives it either a green, yellow or red rating, like a traffic light. Green means the fish is relatively abundant and harvesting it does little harm; yellow means eating the species may be problematic; and red means it should be avoided. Bluefin tuna is a deep red. "When we started the list in 1998, *fish* was



just a piece of fish, like a slice of bread," he says. "There was really no place to go for information on individual species, but now anybody who is interested can look up this information."

Fishermen and environmentalists generally agree that if one is to eat fish, choosing abundant local species is the best way to go. Unfortunately, that doesn't usually happen. Consumers want their Nova Scotian swordfish or their Japanese bluefin tuna, even if they live in Phoenix. That demand has led to industrial-scale fishing across the globe, which harvests about half of the world's fish, and has led to the depletion of many types of fish—often species that aren't even being targeted. This is accomplished by fishing vessels like super seiners—huge ships that surround tuna and other species with large circular nets that close at the bottom and pull everything inside out of the water. Or the "longline," thousands of baited hooks spanning up to 40 miles of line are trawled behind a ship, snagging more than 80 species of nontarget animals like sea turtles, marlin and bluefin tuna, according to Pew Charitable Trusts, an environmental and advocacy group. Trawling, in which nets are dragged on the seafloor, can also damage deepwater corals and destroy fish habitat.

Meanwhile, ineffective laws or lack of regulation in general remains a huge problem, especially in Africa and Asia, which are "out of control and a disaster," Safina says. In those locations, illegal and reckless fishing takes place regularly without any consequences for those who do it, he says. (On the other hand, regulation in the U.S. and Europe is becoming tighter, says Michele Kuruc, vice president of ocean policy of the World Wildlife Fund, and stocks of some fish off the shores of these areas, such as cod in the North Sea, are growing.)

Much of the problem comes down to marketing and perception. While fish is nutritious, it's not necessary for a healthy diet—despite the breathless media claims. "I believe the medical profession has been irresponsible in their recommendations" that promote fish eating, says



**BAD CATCH:** A commercial sand eel fishing boat in the North Sea near Denmark. Sand eels have been heavily overfished in the area, leading to problems up and down the North Sea food chain.

Boyce Thorne-Miller, a science policy adviser to the Northwest Atlantic Marine Alliance. "They certainly have not taken the health of marine ecosystems into account, and I don't believe they've even taken the best interest of their patients into account." There may be downsides, he points out, to eating fish like large tuna or swordfish that contain significant quantities of mercury, a toxic heavy metal.

For example, there are plenty of other sources of omega-3 fatty acids, a healthful component of fish touted by doctors that actually derives from algae, Thorne-Miller says. Several companies now offer products rich in omega-3 made from algae, which are free of contaminants found

## BARRETT SAYS CALLING FISH "AQUATIC BUSHMEAT" IS "ENVIRONMENTAL PROPAGANDA."

in fish, Earle says. These products also won't drive "industrial-scale overfishing of forage fish species so critical to marine food webs" in order to get at fish oil, Thorne-Miller adds.

Earle argues that if people really thought about what they were doing—killing and eating wild animals that each have unique personalities—they might change their behavior. She mentions a time in the 1970s when, from underwater, she filmed fish being netted. "The fish in the net—they are panicked," Earle says. "We've become hardened in our view of pain that we inflict gratuitously on fish. We don't think of them as creatures worth noticing." ■

# Newsweek

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+

**A NOT FUN RUN:**  
Jurek doesn't have  
a household name,  
but based on his  
incredible record in  
the sport of ultra-  
marathon, he's  
one of the world's  
best athletes.



DOWNTIME

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## A DEAD SPRINT IN THE WOODS

Ultramarathoner Scott Jurek just ran the Appalachian Trail in 46 days—and he thinks you should too

IT USUALLY takes an experienced hiker about six months to complete the Appalachian Trail, which is 2,180 miles long and passes through 14 states. Imagine covering it in 46 days.

That's what Scott Jurek did. Waking up early every morning, the legendary ultramarathoner—who set out to break the world record for crossing the trail—ran about 50 miles a day over rocky terrain on a trek that started in Georgia and ended in Maine. He ate on the move and didn't shave. Sometimes, he only slept for an hour at night. Fighting through exhaustion, he finally crossed the finish line—the top of Katahdin Peak in Baxter State Park in Maine—on Sunday, July 12, after 46 days, 8 hours and 7 minutes. He rested his head on a park sign, having bested the previous record by three hours.

*Newsweek* interviewed Jurek as he was driving from the East Coast toward his home in Seattle. He does not sound like a crazy person. In fact, he believes that ultramarathoning—the sport he

has dominated for 15 years—has something to offer the average weekend warrior. “You can be a casual ultramarathoner,” he says. “We’re seeing that more and more in the sport.” Jurek says he has friends who work 60 hours a week and still manage to get out on the weekends for some “long runs.” Just days after the race, he said he was in good spirits but that his entire body was in pain. What kind of person would willingly subject himself or herself to this?

It would be reasonable to assume that Jurek’s heart must be seven times larger than that of the average magazine reporter, that his brain is incapable of feeling pain or that he weighs 30 pounds and has legs that start at his armpits. But none of that is the case, and the path that led him to the top of his sport was far from ordained. “I used to hate running as a kid,” he says. “Soccer, baseball, basketball—*those* were sports.”

Two decades ago, Jurek began long-distance running while working 50 hours a week as a

BY  
**JACK MARTINEZ**  
@ian\_scuffling



physical therapist. He came in second during his first 50-mile race and just kept running. "Most of my weekends and off days were spent out on the trail," he says. "A lot of endurance athletes have to make those sacrifices, and that's the beauty of the sport. People do it because they love it."

In fact, Jurek thinks most people could do what he does. "I don't think you need to have some type of genetic line that predisposes you to the sport. It really comes down to whether you have the mental drive. A lot of the sport is managing the body, figuring out how to properly hydrate and eat."

A slow 10 miles might be the pinnacle of most joggers' endurance, but an ultramarathoner will practice for 50- and 100-mile races by jogging "normal" marathon distances. "They know they're not going to go out there and win a race," says Jurek of his hobbyist buddies. "They run just to finish." It's a feeling many people have about their neighborhood 5K.

Jurek, however, doesn't run just to finish. He's put together improbable streaks at high-profile races. He won the Spartathlon—a 152-mile race in Greece from Athens to Sparta—three consecutive times. He won the Western States

Endurance Run seven consecutive times. He won the Leona Divide 50-mile run four times between 2000 and 2004. Even Michael Jordan had only two "three-peats."

After 15 years at the top of the sport, Jurek is one of the few people to become a professional in ultramarathoning. Through his best-selling book, *Eat & Run*, speaking engagements, endorsements, coaching business and the small amount of prize money he earns, he now makes a living as a full-time runner. He'll probably never win an ESPY, but on sheer mileage he should be a contender in any discussion about the world's best athletes.

In 2009, Jurek decided to take a more survivalist approach. "I've always wanted to do the nation's big, scenic trails," he says. Trail running tests one's ability to adapt, forcing an ultrarunner to deal with altitude and weather to a greater extent than road races do.

Growing up in Minnesota, he spent much of his free time hunting, fishing and exploring the outdoors. "Going out to the Appalachian Trail really reminded me of those roots," he says.

But what keeps someone going during mile 1,999? Or during those days when he ran on

**THE LONG WAY AROUND:** Over the course of 42 days, Jurek ran 2,168.1 miles of the Appalachian Trail through 14 states. He bested the last record by three hours, though the Trail takes most hikers six months to complete.



less than an hour of sleep? "Having things that can motivate you late in the run is key," he says. "You've got to find ways—whether it's music, or [your] charity, or running on behalf of somebody who can't run—you've got to have something driving you forward."

You also need a support team. While out on the trail, Jurek had to carefully monitor his food intake, eating every 30 minutes to avoid losing too much energy. His wife, Jenny, managed his supplies, driving the trail in a truck carrying enough water, Clif bars, protein gels and clothes for both of them to survive in the mountains. "My wife had the tougher job," he says. "I've told everyone we've talked to that I didn't break the record, we did. My wife and I."

Though Jurek says that he often goes for a fun run within a few days of completing a 100-mile race, it'll take a while to recover from this latest feat. "My feet are so sore right now," he laughs.

He may also have to deal with some legal ramifications of his post-run celebration. In a statement on Facebook, Baxter State Park officials criticized Jurek, saying his victory party on top of Katahdin Peak violated park rules, including hiking group size limits, alcohol consumption in public (there was champagne) and filming inside the park. Most of all, the officials were critical of Jurek's sponsorship deals, calling his historic run a "corporate event" that was "incongruous with the park's mission" of wilderness preservation.

Jurek thinks he's being used to draw attention to this issue. Park officials stated that corporate

sponsorships for endurance tests on the Appalachian Trail impede the pristine quality of the wilderness. "I'm not immune to the rules," Jurek says. "But I'm dealing with that in a professional manner." He argues that the officials were "flat-out lying" in order to make their point.

Retirement looms for Jurek, 41, who wants to focus on starting a family. Of course, he'll still be

## "MY FEET ARE SO SORE RIGHT NOW."

getting out on the trail, focusing on running ultramarathons for fun, rather than breaking records. Given the attention he's received for his Appalachian Trail jaunt, another book might even be on the way. But in the meantime, he'll put his feet up. "I'm going to lay on my couch," he says, "taking some deep breaths and not moving." ■





## BUT FIRST, LET ME TAKE A SMELFIE

# Why one startup thinks adding scent to our virtual conversations could bring us back to reality

**WITH HIS WILD** eyes and unruly mop of salt-and-pepper curls, it's no surprise that David Edwards is often likened to the fictional, eccentric, chocolate-making genius Willy Wonka—equal parts madness and delight. From his experimental restaurant venture, Café ArtScience, in Cambridge, Massachusetts, the Harvard-professor-turned-entrepreneur is showing off a digital tap-and-sniff book for iPad while the lunch crowd inhales puffs of vaporized scotch at the bar.

"Here's Goldilocks. She's alone in the woods, and she's afraid!" Edwards reads theatrically as we flip through the pages. An emblem with a cartoon nose appears in the treetops on the page, instructing readers to tap it, which I do. The nose disappears and the message "Preparing oPhone" pops up in its place. On the table in front of us, the oPhone—a smell-release system that looks like a toy boat and connects to the iPad via Bluetooth—emits a creaking sound before a tiny puff of air with a woodsy aroma floats out from one of its cylinders. In a few seconds, the scent is gone.

Like the oPhone, *Goldilocks and the Three Bears: The Smelly Version* is the brainchild of Edwards and his former student, 24-year-old Rachel Field, who co-founded the startup Vapor Communications in 2013. The book is just the first in a series of children's classics that will become available for iPad later this year from Melcher Media, and which was on display at the Museum of the Moving Image in New York from

April to July of this year. Called *Sensory Stories: An Exhibition of New Narrative Experiences*, the exhibit featured technology that expands upon traditional story delivery methods and the way they play off the senses. Interactive games, films and the Google Cube—a mind-bending virtual cube that stretches a single narrative across its six faces—appeared alongside the eBook.

Last year, Vapor Communications announced its oMedia platform—which it has optimistically dubbed “the iTunes of scent”—when they sent the smell of Champagne and cookies from a phone in Paris to an oPhone in New York City. Since then, their photo-sharing app, oNotes (think Instagram with smell-tagging ability), launched to a modest usership—probably because the smells are accessible only with use of an accompanying oPhone, of which there are few. But all that will be changing soon: Along with eBooks, this fall the company plans to release an iPad case that will release up to 50 smells. Edwards declined to tell *Newsweek* specifically how the oCase will work, but says it will pair with odor-enhanced oGames, oMenus, oMusic playlists—they're even working on a scent-scored oFilm with Maya Sanbar, a London-based documentary producer, who worked on 2006's *Goal Dreams* and the 2008 Academy Award-nominated *Trouble the Water*.

Edwards met Field in a class he was teaching in 2012, and he says it was her idea that set him down this path of olfactory exploration. “The

+  
**SCENT-SATIONAL:**  
A girl reads an iPad eBook next to the oPhone. The oPhone's inventors hope to add smell to the information we receive from digital media.

BY  
**LINDSAY TUCKER**  
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idea was, What if you could have the cellphone that sends smells?" says Field. What would Instagram become if you could tack on the scent of Grandma's gooey pecan pie or Jay Z's sweaty T-shirt? Science has long understood that scent is strongly linked to memory and emotion, and when we send Snapchats or scroll through photo feeds, we're missing out on important sensorial

information. The technology to capture a scent with a phone isn't there yet, but Fields says they won't stop 'til they get there.

This isn't the first time techies have attempted to incorporate the olfactory into entertainment. "Smellies" were born in 1933, when film producer Arthur Mayer installed a scent-delivery machine in Paramount's Rialto Theater in New York City.



Unfortunately, it was impossible to clear the aromas once they were emitted, and the experiment was quickly abandoned. Nearly 30 years later, the ill-fated Smell-O-Vision debuted with the gimmicky murder-caper *Scent of Mystery*. Producer Mike Todd Jr. teamed up with Swiss inventor Hans Laube, who had presented his elaborate scent-release system at the 1939 New York World's Fair. In 1969, they unveiled the improved invention, which they called "smell brain," at *Scent of Mystery* showings in three cities. Aromas of wine, pipe tobacco and train exhaust were delivered through tiny tubes to moviegoers' seats, but it failed to be the sensory extravaganza they had in mind: Scent particles linger, they blend, they stick to clothes and upholstery. And lest we forget, John Waters's scratch-and-sniff homage to Smell-O-Vision: Odorama, which had its debut and swan song in the 1981 cult favorite *Polyester*. In 2010, *Time* named Smell-O-Vision one of the 50 worst inventions of all time.

Smell-o-tainment's previous failures don't worry Edwards. Its delivery system is more advanced, he says, the scent distribution more localized. The cartridges inside the oPhone only release a tiny bit of vapor, for a smell that's designed to last just 10 seconds. "It's so different from what's been done before," he says. "Once the smell of chocolate is gone, you can replace it with the smell of cedar without getting that cloud of both."

Avery Gilbert, self-described "smell scientist" and author of *What the Nose Knows: The Science of Scent in Everyday Life*, says the portability of the oCase holds the most promise for the platform's success. "What's really on offer is a pocket smell-generator," he says. "It's potentially a mood candle, an aroma alarm clock, a digital whoopee cushion." Making smell available on the go is a much bigger proposition than just tagging photos and videos, he says. We're in an age now where news is shared in 140-character messages, so "a 10-second burst of 'smell this!' fits right in."

Ironically, oMedia's goal is to push our

nose-in-the-phone society to re-engage with our physical surroundings. They say oMedia will force people to stop and smell the roses, so to speak. Charles Melcher, founder of Melcher Media, says that it was this very idea that encouraged him to get involved with oBooks. Before radio, TV and Netflix-bingeing, storytelling was an interactive human experience, like sitting around a campfire, he says: "This technology brings us back into our bodies. It highlights the senses and is very participatory. When we interact with the outside world, we utilize all five senses, so it's natural that storytelling should evolve into what [we] call 'a full-body experience.'"

Still, the oPlatform could end up being just another digital distraction from our physical environment. Will tagging the scent of ocean air really make us put down our phones and run carefree into the surf?

"The fart-smell question always lingers in the background," says Gilbert, who thinks the current "foodie" smells available for oNotes might be commercially shortsighted. With any innovation, the inventor anticipates a certain use for it, and sometimes it's successful in a totally different way. "People are gonna want

## WHAT WOULD INSTAGRAM BECOME IF YOU COULD TACK ON THE SCENT OF GRANDMA'S GOOEY PECAN PIE OR JAY Z'S SWEaty T-SHIRT?

body odors," he says. "If a girlfriend could send the smell of straight-out-of-the-shower, freshly washed hair to her boyfriend, that would make for some compelling messaging."

The oNotes app, though still only used by a small community of early adopters, is already flooded with scent-tagged selfies. A smiling teenage girl with notes of "saffron" and "strawberry," a 20-something hipster who thinks he smells like "rain." Fields admits that "smelfies" were a pleasant surprise. Could oMedia's use as an oddly personal product help them survive in the smell-entertainment market where all others have failed? It certainly looks promising: Our selfie-obsessed culture might be perfectly poised to exploit the last untapped sense when it comes to media—social and otherwise. But only the nose knows for sure. ■

## HERALDED 'MAUDE'

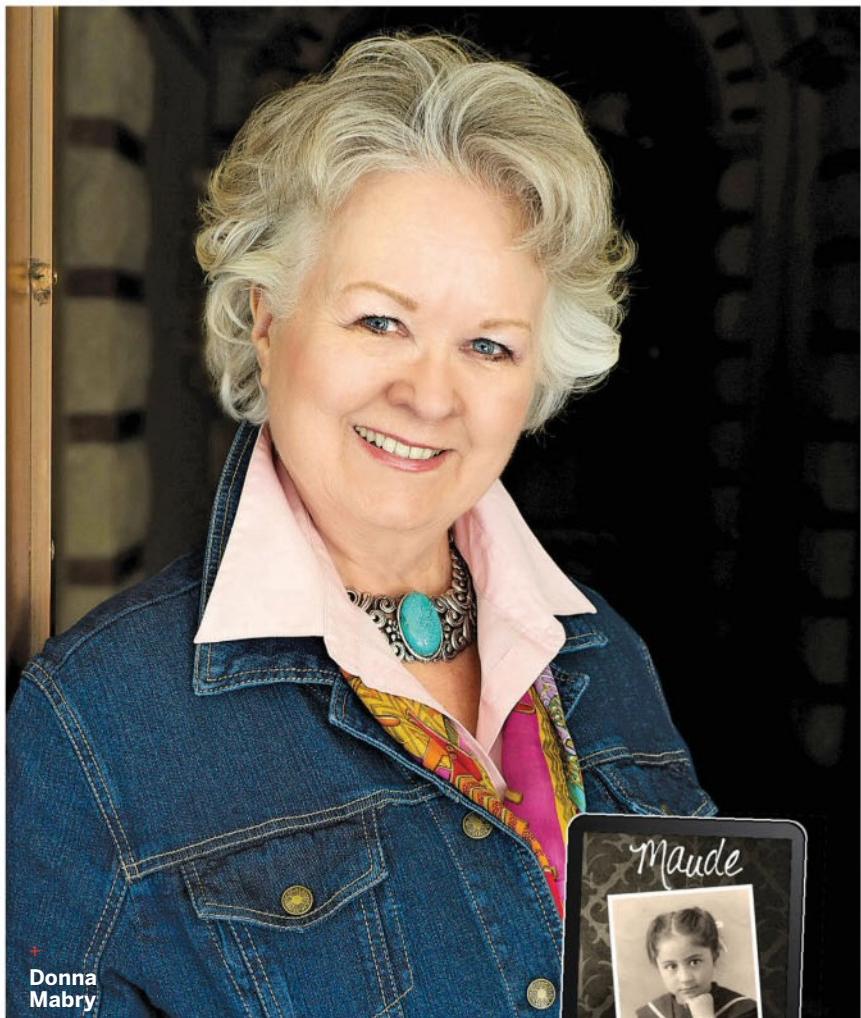
How a shy former Avon lady became the queen of self-publishing

A SEAMSTRESS and former door-to-door salesperson nearing retirement age takes a job sewing costumes for a Vegas show, and the stories she hears backstage inspire her to trade in her Singer for a laptop. Twelve years and 15 books later, at the age of 72, Donna Mabry has the top nonfiction Kindle Direct Publishing book of all time.

Mabry was raised to believe that once high school was finished, "you were expected to earn your living." She became an Avon lady, learning skills that served her well later in life.

In 2009, Mabry moved to Las Vegas, where her daughter, Melanie, had lived for years. She never foresaw a career as a writer ahead of her, but the backstage gossip intrigued her. She heard about rowdy guests getting kicked out of hotels and casinos, and the shocking misdeeds of celebrities. Mabry figured other people could be as amused by Las Vegas's oddball intrigue as she was, so she decided to write it all down. The result was *The Last Two Aces in Las Vegas*.

At her first book signing, the Barnes & Noble manager told her



Donna Mabry

not to lose heart if she didn't sell anything, since newbie authors rarely do. But Mabry wasn't discouraged. I know how to sell stuff, she thought, and used tricks she'd learned during her days as an Avon lady. Wearing an attention-grabbing red dress, she beckoned potential readers over to her table and whispered, "This is the best one! Ask me how I know." Then she'd hold up one of her books, with the author photo right next to her face. It always got a laugh, but it also got results: By the end of the evening, her books had sold out.

Next came a series of historical romances, a few mysteries, a political thriller and a lighthearted comedy. Her latest book, *Maude*, was a total departure—it's a raw and deeply personal biography of

her grandmother. After release in October 2014, within weeks it was on the *Wall Street Journal's* non-fiction e-books best-seller list, where it remained for over four months—at one point in the top 10, ahead of books backed by major motion pictures, like *Unbroken* and *American Sniper*.

It now has nearly 9,000 reviews on Amazon.com, with an average rating of 4.4/5 stars, and it will soon be translated into German, Russian and Italian, thanks to Mabry's new agents at literary powerhouse Trident Media.

Mabry's daughter encouraged her to write *Maude*, as she'd been hearing incredible stories about her great-grandmother her whole life. Maude Foley was orphaned at 8, married at

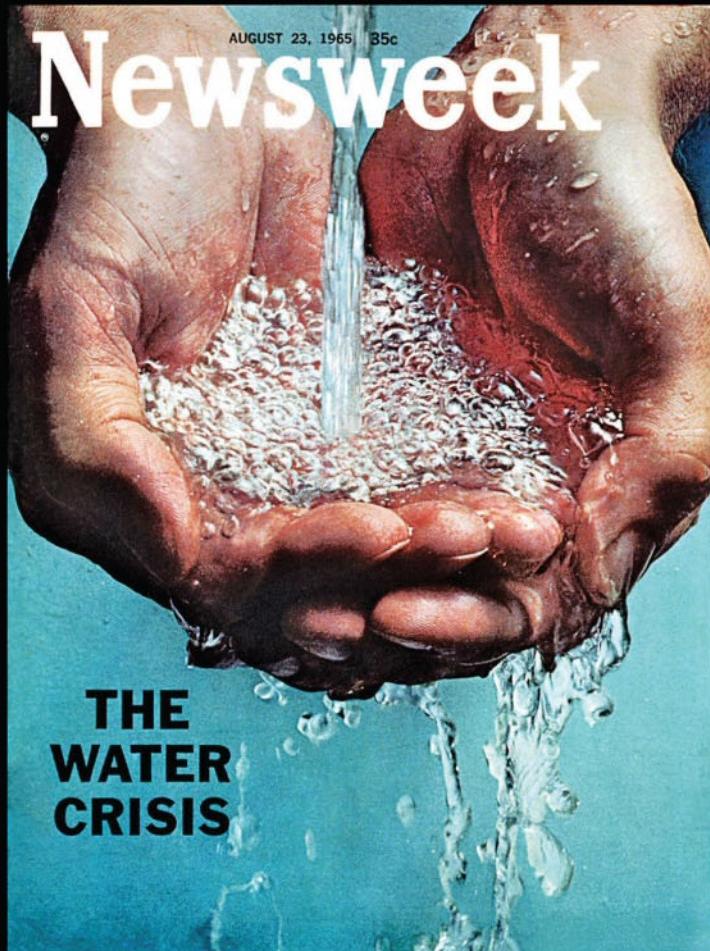
14 and a widowed mother by 16. She lived with her in-laws and daughter after her husband's death and took up sewing to pay bills, a skill that she passed on to her granddaughter, and one that led, in a very roundabout way, to Mabry's phenomenal success today.

Mabry has received some beautiful responses from fans of *Maude*. One woman in Detroit, the city where Foley died, was so touched by the story that she sought out Foley's grave, had the caretaker raise it up from where it had sunk into the ground and dedicated herself to its upkeep.

"If *Maude* had a vanity license plate" says Mabry, "it would simply say, 'Just keep going.'" ■

# REWIND

50  
YEARS



AUGUST 23, 1965

LOS ANGELES RIOTER JUSTIFYING  
HER BEHAVIOR DURING THE WATTS  
RIOTS. FROM "LOS ANGELES: THE  
FIRE THIS TIME" BY PETER GOLDMAN

"I threw anything I could get my hands on to hurt

them. We were throwing at anything white. Why not do it to you guys? You're doing it to us."



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